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Within the field of psycho-oncology, it has become increasingly apparent that cancer not only affects the patient, but disrupts the entire family unit, particularly adolescent children. The goal of the current study was to take the next step in this line of research by investigating mechanisms of influence for how parental cancer impacts adolescent adjustment. The framework of attachment theory was applied to make theoretically driven predictions and to create models for how and why these effects would occur. It was hypothesized that many of the adjustment problems found in teens dealing with parental cancer would be related to negative changes in the parent-child attachment relationship.

Adults recently diagnosed with cancer, and their adolescent children were asked to complete measures assessing: adolescent and parent functioning, adolescent attachment, adolescent coping, and cancer specific variables. In addition, a matched comparison group completed similar measures (without cancer specific questions).

As predicted, adolescents in the parental cancer group displayed more insecure attachment to parents. They also used more Secondary Control Coping (emotion oriented) while the comparison group tended to favor Primary Control Coping (problem focused). In contrast to prior research, we found no differences in adjustment between the two groups. However, after controlling for attachment style, adolescents with a parent with cancer actually reported fewer problems that those in the comparison group. Further,

analyses with the groups combined confirmed that attachment style predicted coping, stress responses, and adjustment in the expected ways.

Hypotheses were also tested within the cancer group alone to determine what aspects of parental cancer lead to teen difficulties. We found no effects for cancer stage or site, or parental mental health. The effects for perceived severity of illness, which has been widely documented in the literature, were unexpected and initially appeared contradictory. Adolescents who reported higher perceived cancer severity and higher impact of cancer on life in general, had better overall personal adjustment as well as more clinical symptoms. In addition, adolescent emotional symptoms were negatively associated with the amount of information a teen had been given, and positively associated with the number of cancer-related stressors reported. Additionally, attachment style fully mediated the effects of cancer-related stressors on adolescent-reported emotional symptoms.

In conclusion, support was found for our hypothesis that many of the previously reported difficulties in teens dealing with parental cancer were actually due to changes in the parent-adolescent attachment relationship. Furthermore, within the cancer group, attachment style fully mediated the effects of cancer-related stressors on adolescent emotional symptoms. There were also interesting findings in this study suggesting posttraumatic growth in adolescents dealing with parental cancer. Several other important variables were predictive of adjustment, such as amount of information given to teens about cancer. This may provide some hope for families as well as implications for intervention and future research.

PARENTAL CANCER: THE PARENT-CHILD BOND AT RISK

by

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_____
Committee Chair

To the Midthun family for all of your support on this long road. To Will for always believing that I was capable of completing this project even when I doubted it myself. Lastly, to Tate for giving me motivation, but also balance in my life. I love you all.

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

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CHAPTER I

REVIEW OF RELEVANT RESEARCH

Overview of Cancer in Adults of Parenting Age

Cancer is the second leading cause of death in the United States accounting for approximately 500,000 deaths each year (Ries Miller, Hankey et al.,1994). In addition, given the increase in treatment effectiveness and cancer survival rates, a great many more individuals are living with cancer. Thus, cancer affects the lives of millions of individuals diagnosed with cancer and their family members each year. (Armistead & Forehand, 1995; Armistead, Klein, & Forehand,1995; Worsham, Compas, & Ey, 1997). It has been estimated that hundreds of thousands of adults are diagnosed with cancer every year that have a child living in the home.

The physical and psychological consequences of a cancer diagnosis and treatment can greatly impact the cancer patient's ability to care for or parent his or her children (Lewis, Ellison, & Woods, 1985; Nelson & Allen, 1994). Cancer patients suffer from physical effects stemming from both the cancer itself as well as the side-effects of treatment such as fever, nausea and vomiting, hair loss, weight loss, pain, and sleep disturbances (National Center for Health Statistics, 1994). For example, fatigue is reported by as many as 96% of cancer patients, particularly those actively undergoing treatment (Heinrich, Schag, & Ganz, 1984). Fatigue can be expressed physically, mentally, or emotionally. It can be highly debilitating as it may prevent the patient from

participating in everyday activities, such as working, parenting, and household chores. These symptoms may significantly limit cancer patients' daily lives and functioning and may also be frightening for the patient as well as his or her children. Patients may also be hospitalized frequently resulting in their absence from the family.

In addition to the many physical symptoms cancer patients experience, they also are at high risk for psychological problems such as anxiety, depression, and delirium (Heinrich et al., 1984; Hubbard & DeVita, 1987; National Center for Health Statistics, 1994). Some of the more common psychological symptoms that cancer patients face are anxiety (44% of cancer patients report anxiety, 23% of which are at a significant level), delirium and organic mental disease (15-20% of cancer patients and 75% of terminal cancer patients affected), and depression (15-25% of cancer patients experience Major Depression) (Heinrich et al., 1984; Hubbard & DeVita, 1987; National Center for Health Statistics, 1994). All of these psychological disorders are highly distressing and cause significant impairment in the patient's functioning and well-being. While treatment of these mental health problems is essential to the patient, many symptoms also overlap with grief and bereavement over possible death and may, therefore, go untreated.

Perhaps the most troubling effect of cancer is the threat of death. Whether Stage 1 or 4, the diagnosis of cancer is traumatic and raises concerns about mortality. In addition, perceptions about possible death may or may not be founded in the reality of the disease. The concerns that cancer raises about one's own mortality do not dissipate with treatment or even with remission (Heinrich et al., 1984; Hubbard & DeVita, 1987;

National Center for Health Statistics, 1994). Cancer recurrence is always present as a threat and cause of anxiety in the minds of those in remission (Lewis et al., 1985).

The Effects of Parental Cancer on Child Adjustment

Recent research suggests that children and adolescents who have a parent with cancer often demonstrate increased behavioral and emotional problems (Armistead & Forehand, 1995; Armistead et al., 1995; Northouse, Cracchiolo, & Appel; 1991; Roy, 1990; Siegel, Mesagno, Karus, Christ, Banks, Moynihan, , 1992). They tend to have higher levels of depression, anxiety, and behavioral problems, as well as lower self-esteem, scholastic motivation, and social competence than normal controls, and increased levels of somatic complaints and school absenteeism (Cain & Staver, 1976; Christ et al., 1993; Hirsch, Moos, & Reischl, 1985; Lewis et al., 1985; Morgan, Sanford, & Johnson, 1992; Stein & Newcomb, 1994). Many children and adolescents experience problems severe enough to fall within the clinical range for depression and anxiety (Armistead et al., 1995; Compas, Worsham, Ey, & Howell, 1996; Evans, Keenan, & Shipton, 2007; Worsham et al., 1997). However, there has been a great deal of variability found within these studies suggesting that there are likely to be moderators or mediators of this effect. Some research has also demonstrated differences in child and parent report of maladjustment, with parents reporting fewer symptoms than children (Worsham et al., 1994). Researchers have begun to study variables that may predict adjustment (e.g. cancer stage, perceived severity, gender of parents and children, coping, age of child). Many of these studies are limited, however, by not having a comparison group or being atheoretical in design.

For example, it has been found that adolescents who have a parent with cancer tend to be at the highest risk for anxiety and depression (Adams-Greenly, Beldoch, & Moynihaan, 1986; Christ, Siegel, & Sperber, 1994; Compas et al., 1996). Increased risk in adolescence appears to be associated with adolescents' cognitive and emotional development, as adolescents are more aware of the potential loss of the parent and of the parent's pain than younger children (Christ et al., 1994). Parental illness may disrupt the normal conflict with parents and appropriate separation-individuation that occurs during adolescence (Adams-Greenly et al., 1986; Christ et al., 1994; Lewis et al., 1985; Pedersen, S., 2005). Adolescents who have a parent with cancer are also often concerned with abstract aspects of their relationship with their parents such as potential loss of the parent's role in the family, financial concern, changes in family climate and roles, and concern for the well parent's adjustment (Adams-Greenly et al., 1986; Aldridge & Becker, 1999; Christ et al., 1994; Pedersen, S., 2005). Finally, adolescence is a developmental period marked by strong ego-centrism, with adolescents tending to take events or others' behavior personally (Compas et al., 1994; Wellisch, 1979). This makes it likely that adolescents will interpret changes in a parent's behavior as disapproval or personal rejection (Wellisch, 1979).

Variables that may Influence Family Adjustment

Given that research on the effects of parental cancer (and illness more generally) has only recently become a focus, investigation of the pathways through which parental cancer affects children and adolescents has been limited. Rolland's family systems approach outlines the importance of many different illness, patient, and family variables

on adjustment (Rolland, 1987, 1990, 1999). For example, the onset, course, and outcome of cancer can interact with a family's structure, life cycle, and adaptability as well as their belief system in determining the adjustment of the family to diagnosis and treatment (Rolland, 1987, 1990, 1999).

Other important variables that may influence the child or adolescent's adjustment to parental illness include the following: the child's and parent's ages and genders, family coping, the child's perceptions of parenting and cognitive appraisals of the illness, social support from friends and extended family, mental health of both parents, physical health of the non-ill parent, and the quality of the relationships within the family (Compas, Malcarne, & Fondacaro, 1988; Harris, & Zakowski, 2003; Johnston, Martin, Martin, & Gumaer, 1992; Lichtman et a., 1984; Peters & Esses, 1985; Wynne, Shields, & Sirkin, 1992). Research by Lewis et al. (1993) supported that increased illness demands, not the illness itself, were associated with depressive symptoms in the spouse, which negatively affected other family members including children. Armistead , Klein, and Forehand (1995) suggested several paths by which parental illness can impact children's functioning. These included parental emotional distress, the marital relationship, and the parent-child relationship (Armistead et al., 1995; Brown et al., 2007). .

Steel, Forehand, and Armistead (1997) provided a preliminary investigation of the relationships between severity of illness, parental adjustment, marital adjustment, parent-child relationships problems, child's use of avoidant coping, and child internalizing problems in a group of families with an ill father. The results indicated that increases in illness severity predicted disruptions in several family process variables. For example,

illness severity was associated with psychological maladjustment in the patient and in the non-ill parent. These parental depressive symptoms indirectly related to child internalizing problems with parent-child relationship problems and the child's use of avoidant coping strategies as mediators of this effect (Steele et al., 1997). This association between parental maladjustment and child internalizing problems via parent-child relationship problems and the child's avoidant coping was true for both mothers and fathers. Disruptions in mother-child and father-child relationships were related to increased avoidant coping. Furthermore, higher avoidant coping predicted more internalizing symptoms, which is consistent with prior research on coping and adjustment (for a review see Compas, Connor-Smith, Saltzman, Thomsen, and Wadsworth,, 2001). While recent studies such as this provide preliminary evidence for the role of the parent-child relationship and adolescent coping as influential variables, the mechanisms through which parental cancer affects adolescent adjustment is still not understood (Armistead et al.,1995; Compas, Malcarne, & Banez, 1992; Lewis et al, 1993; Steele et al, 1997). Identification of important variables, such as the parent-child relationship, that mediate or moderate the effects of parental cancer on coping and adjustment would broaden our understanding of the impact of this stressor on adolescents.

Attachment Theory and Research

Attachment Theory and Normative Development

The pathways through which cancer affects parenting, the parent-child relationship, and child adjustment can be elucidated using the well-established model of attachment theory. Armsden and Lewis (1993) stated: "Attachment theory, supported by

a large body of research, provides a framework for understanding and predicting children's reactions to changes in family life produced by serious parental illness" (p. 154).

Attachment theory, as proposed by John Bowlby (1969), provides an ethological theory accounting for both normative and pathological interpersonal development. Bowlby (1988) explained that to be attached to a caregiver (or other attachment figure) means that a child or adult is likely to seek proximity with the caregiver (or attachment figure), particularly when distressed. Bowlby stresses that attachment is dependent on both internal representations of caregivers' past behavior and current conceptions of caregiver availability.

Bowlby argued that the typical attachment behaviors and emotions of distress and protest expressed by a young child when separated from caregivers serve an evolutionary function to keep caregivers in close proximity (Bowlby, 1973). This *proximity seeking* behavior serves the function of protecting the vulnerable child from environmental danger. When the parent is unavailable or proximity cannot be maintained, the child becomes anxious, prompting the expression of attachment behaviors aimed at maintaining proximity and anxiety reduction. In addition to proximity seeking, caregivers serve as a *safe haven* where a child can turn for emotional support or comfort, and a *secure base* from which the child can freely explore (Bowlby, 1969, 1973, 1980, 1988). The exploratory system prompts the child to investigate his or her environment. However, if there is an anxiety-producing event or if the caregiver is perceived to be unavailable, the child will become anxious, terminate exploration, and seek comfort from

the parent. A child is most likely to seek comfort and protection when he or she is ill, hungry, tired or feels threatened by either the environment or loss of the caregiver. Main (1990) described that this proximity seeking behavior is the primary attachment strategy serving to promote safety and survival. However, attachment behaviors occur within the context of the parent-child relationship and rely on the responsivity of the caregiver to the child's cues and the child's adjustment to the parent's sensitivity (Ainsworth, Blehar, Waters, & Wall, 1978). Thus, the study of attachment not only must be viewed in terms of normative development and primary strategies, but also in individual differences.

Individual Differences in Attachment

In her extensive work on individual differences in attachment, Mary Ainsworth identified three main categories of parental responsivity: consistently responsive, consistently unresponsive, and inconsistent (Ainsworth et al., 1978; Ainsworth, 1985). In relation to these individual differences in parental caregiving, there are corresponding differences in children's internal representations and attachment quality. A child's perception of the availability and responsivity of his or her caregivers in threatening situations results in different expression of attachment behaviors and in the quality of attachment relationships. If a caregiver is inconsistent or unresponsive, the primary attachment strategy of proximity seeking may not be effective in reducing the child's anxiety. When this occurs, the child may turn to a secondary strategy to minimize or maximize the primary behavioral strategy (Main, 1990). Main (1990) proposed that there are two types of secondary attachment strategies: avoidance/deactivation and heightening/hyperactivating. By observing many children's attachment behaviors,

Ainsworth was able to identify several distinct patterns of attachment that utilize either these primary or secondary attachment strategies.

Children with a responsive and accessible parent feel comfortable exploring the world, as they assume their parent will be available if they need comfort or protection. Infants and children who demonstrate this pattern of exploration combined with reliance on parents when distressed are considered to have a "secure" attachment style (Ainsworth et al., 1978; Ainsworth, 1985). These children tend to feel confident in their caregivers and in their own interactions with the world and make up approximately 60% of children (Hazan & Shaver, 1994). This is not to say that "secure" children do not feel fear or anxiety when actually separated from the caregiver in the strange situation, rather, they are often distressed by the separation but are comforted by the return of the caregiver. In other words, the parent tends to be available and responsive to the "proximity seeking" needs of the child, comforts the child and is an emotional "safe haven", and is a "secure base" from which the child can explore (Shaver & Cassidy, 1999). Thus, the primary attachment strategy is successful and no secondary strategy is needed. Secure children explore the environment while using the parent as a safe haven in case of a threatening situation. Thus, they develop a view of others as available in time of need while also fostering self-efficacy.

In contrast, infants and children whose caregivers tend to be unavailable or unable to provide comfort in a threatening situation assume that their caregivers will not be responsive to their needs and/or that they are unable to behave in ways that get their needs met. These children, often generally labeled as insecurely or anxiously attached,

receive inconsistent care or rejection by caregivers, and are unable to express attachment behaviors at appropriate times (Ainsworth, 1985; Bowlby, 1969, 1980, 1988; Shaver & Cassidy, 1999). This insecure type was broken down into two separate subgroups, "avoidant" and "ambivalent", based on differing behavior in the strange situation paradigm (see Ainsworth for a description of this procedure) as well as what secondary attachment strategy is used (Ainsworth et al., 1978; Ainsworth, 1985). Researchers in attachment use several different labels to describe these styles. Secure, avoidant, ambivalent, and fearful styles are used consistently throughout this paper to ease understanding.

The caregivers of avoidant children generally reject their children's bids for comfort, especially physical closeness. Children with an avoidant attachment style do not appear distressed by separation from their caregiver during the strange situation. However, recent research suggests that these children (making up 25% of American samples) do in fact show heightened arousal and increased cortisol levels compared to securely attached children (Shaver & Cassidy, 1999). Thus, they may in fact be distressed but suppress proximity seeking behaviors based on expectations of parental rejection. The secondary attachment strategy utilized is avoidance/deactivation. Avoidant children engage in exploration but not with the same interest as securely attached children (Ainsworth et al., 1978; Ainsworth, 1985; Shaver & Cassidy, 1999).

In contrast, ambivalent children, making up 15% of American children, were described by Ainsworth as being both anxious and angry with their parents. Ambivalent children are preoccupied with the availability of their caregivers, which inhibits

normative exploration of the environment. While distressed at separation (as in the secure group), ambivalent children are not comforted by the return of their caregiver but remained distressed. The caregivers of ambivalent children are generally observed to be inconsistent in their reponsivity to their child's cues. They are at times unresponsive or unavailable while at other times they are overly intrusive. These individuals worry about the caregiver's availability even when no threat exists resulting in the use of a heightening/hyperactivation secondary strategy. Ambivalent children lack confidence that their caregiver will be available if a threat occurs and do not feel comfortable exploring the world, lacking confidence in their own ability to deal with the world (Ainsworth et al., 1978; Ainsworth, 1985; Shaver & Cassidy, 1999).

Since Ainsworth's classification of attachment styles, researchers have identified a fourth pattern, labeled disorganized or fearful attachment (Shaver & Cassidy, 1999). Children are labeled as disorganized if they lack a coherent strategy for dealing with attachment related anxiety. This style is expressed as a mixture of avoidant and ambivalent behaviors. Research suggests that this pattern arises when a child's primary caregiver is depressed, abusive, or otherwise impaired (Shaver & Cassidy, 1999). This type of attachment is a relatively new and not fully understood category. It is likely that these individuals do not use primary or secondary strategies but instead have a lack of attachment strategies.

Formation of Internal Working Models

Bowlby (1969/82) proposed that for a child's attachment behavior to shift in response to the environment, he or she must have an "internal working model" of his own

and others behavior. Internal working models are flexible models that are used to understand and predict an individual's interactions with his or her environment and to construct intricate sequences of behaviors (Bowlby, 1980, 1988). Bowlby describes that these models are based on a child's past experience with the environment, specifically the responsivity of the caregiver to his or her cues as well as the perceived availability of the caregiver. Based on the responsivity of the parent to the child's attachment behaviors and the child's current perceptions about the caregiver's availability, the child creates mental models of him or herself and relationships with others. These models guide the child's perception and expectation of others' abilities to meet his or her needs, the child's perception of his or her own self-efficacy in getting needs met, and how the child expresses attachment behaviors. Internal working models change as the child develops new skills and self-reliance and must change in response to environmental feedback.

While not directly observable, internal working models can be inferred by observing how a child organizes his or her attachment behaviors to balance exploration with the need for comfort and safety (Weinfeld, Sroufe, & Egeland, 2000). Attachment styles represent the observable behavioral manifestations of different internal models. Secure children receive consistent responsive care, and thus form an internal working model that others can reliably respond to their needs and that they are able to behave in a manner that gets their needs met (Kobak & Sceery, 1988; Bretheron & Munholland, 1999). Consistent with this notion, secure attachment has been demonstrated to be associated with feelings of self-efficacy, sensitivity to others' emotional cues, resistance to stress, solid social skills, and good mental health (Ainsworth, 1985; Armsden & Lewis,

1993; Collins & Feeney, 2000; Greenberg, 1999; Hazan & Shaver, 1994; Waters et al., 2000).

Children of caregivers who are inconsistent in their care form internal representations that their caregiver is not available even when no threat exists resulting in hyperactivation strategies and increased internalizing and externalizing disorders. These ambivalent children doubt their ability to have their needs met resulting in constant distress and proximity seeking behavior even in the absence of threat (Allen, Moore, Kuperminc, & Bell, 1998; Armsden & Greenberg, 1987; Shaver & Cassidy, 1999; Trinke & Bartholomew, 1997). . They are believed to hold negative views of self and positive views of others. Ambivalent attachment is associated with high rates of internalizing and externalizing disorders as well as somatization, over-reliance on others, and peer difficulties (Shaver & Cassidy, 1999).

Avoidant children tend to have caregivers that are unavailable and rejecting, resulting in "compulsive self-reliance" (Shaver & Cassidy, 1999). These children tend to form internal representations that others are rejecting and do not respond to their needs. They hold positive views of self (believe in their own efficacy) and negative views of others and use avoidant/deactivating strategies. Not surprisingly, avoidant attachment is associated with externalizing disorders, eating disorders, substance abuse, and peer difficulties. In addition, there is evidence that avoidant adolescents experience internalizing symptoms but are likely to minimize their distress (Armsden & Lewis, 1993; Greenberger & McLaughlin, 1998; Allen & Land, 1999).

Continuity in Internal Working Models

Bretherton and Munholland (1999) suggest that working models may remain stable as they become increasingly complex. A great deal of research supports the applicability of attachment theory to adolescent and adult relationships (including parental, peer, and romantic relationships) (Hazan & Shaver, 1994). Bowlby also described that "internal working models" and attachment security are rather stable across development (Bowlby, 1969, 1980, 1988). However, dramatic changes in the availability of a caregiver may influence a child's models of him or herself and expectations of others. Therefore, the security of attachment appears somewhat stable in the absence of major change in the parental availability and responsivity (Hamilton, 2000; Waters, Hamilton, & Weinfeld., 2000).

Very few studies have examined the role of major life events on attachment; however, preliminary findings indicate that parental illness and/or death appears to be related to insecurity of attachment or change from secure to insecure attachment (Hamilton, 2000; Waters et al., 2000; Westmass & Silver, 2001). In a twenty-year longitudinal study, Waters et al. (2000) found that 67% of secure infants became insecure as adults if they experienced an attachment-related major life stressor such as parental illness, loss, divorce, or abuse. In contrast, only 15% of secure infants became insecure adults when faced with no major life stressor (Waters et al., 2000). Furthermore, Hamilton et al. (2000) found that life stressors also served to maintain insecure attachment style. However, there were exceptions to this pattern. Waters et al.(2000) reported that one person changed from insecure as an infant to secure as an adult, despite

a significant illness, due to increases in parental responsivity. In addition, Hamilton et al. (2000) found that some individuals retained a secure attachment style despite having a major life stressor. They speculated that perhaps attachment security functioned as a protective factor. However, they further state that the life stressors experienced by the secure group were qualitatively different and less stressful than those in the insecure group, and tended to be isolated incidents (Waters et al., 2000).

In conclusion, Waters, Weinfeld, and Hamilton (2000) assert that attachment security is generally stable and that change in security is related to change in the family environment. They speculate that negative life events could affect attachment security through changes in actual caregiver availability and responsivity, which alter working models. Waters et al. also remark that negative events may also affect other family members (such as the non-ill parent) and, thus interfere with caregiving. Finally, Waters, Weinfeld, and Hamilton (2000) state that negative events may alter the child's expectations of caregivers. For example, Weinfeld, Sroufe, and Egeland (2000) stated: "if a caregiver becomes chronically ill and the child infers that he or she is now less available. Attachment representations might then change before (or without) actual caregiving failures" (p.704). Overall, Waters et al.'s (2000)findings support Bowlby's ideas about "the openness to change of attachment representations" and "the importance of real-world experiences in such change" (p. 688).

Attachment in Adolescence

Normative development in adolescent attachment. Adolescence is a developmental period marked by profound change and increased independence from

parents. During this time adolescents appear to desire distance and detachment from their parents. However, this is not to say that parents are not important figures during adolescence. Research supports that adolescents seek out attachment figures when distressed, experience anxiety when their attachment figures are unavailable, and feel comforted when with their attachment figure (Allen & Land, 1999; West & Sheldon, 1992). Adolescents' conflicted and contradictory behaviors toward their parents challenge the conception of attachment in adolescence and suggest that attachment should to be viewed in the context of the developmental changes of adolescence.

Adolescence is a period in which the exploratory system appears to be highly activated, as peer relationships, activities, interest in college, and independence increase during this developmental stage. This autonomy-seeking behavior may be conceptualized in the same way as infants' exploration of novel environments. Positive parent-adolescent relationships allow an adolescent to explore independent living, while realizing that parents remain available if needed. Autonomy does not ideally develop in isolation, but in the context of an attachment relationship (Allen & Land, 1999).

Adolescence is also a time of many stressors and adolescents are at heightened risk for depression, suicide, drug and alcohol use (Kenny & Rice, 1995; Shaver & Cassidy, 1999). While many researchers have "emphasized the importance of individuation and psychological separation for late adolescent development, the attachment model highlights the adaptive value of supportive and interdependent relationships throughout the life span and especially during periods of stress." (Kenny & Rice, 1995; p 435). While not as easily observed, attachment behaviors serve a vital role

in adolescent development, as in child development. In tandem with adolescents' cognitive development, attachment behaviors change from overt proximity seeking to more symbolic support (e.g. e-mail, letters, phone calls). Because of these changes, there are increasing intervals during which parental accessibility is not necessary for adolescents' felt security, but confidence in their parents' availability when needed is essential. Thus, actual proximity may not be as important to adolescents and adults as perceived availability or "felt security". The threat of loss of a parent to cancer would greatly diminish this "felt security."

Thus, the adolescent's perceptions of his or her caregiver's availability and responsivity as well as perceived threats to the attachment relationship may be more important than actual availability, responsivity, or threat of loss (Kenny & Rice, 1995). Overall, although it appears on the surface that adolescents desire separation from their parents, the absence of a secure parental base makes it difficult for them to feel confident in normal exploration and individuation (Armsden & Lewis, 1993; Christ et al., 1993).

Individual differences in adolescent attachment. Individual differences in attachment in adolescence are presumed to parallel those in childhood. However, adolescent attachment differences may be more related to symbolic support and perceptions of availability rather than actual physical availability. Securely attached adolescents have parents that are consistently and appropriately responsive to their primary attachment needs. While perhaps not always physically close, the attachment figures of secure adolescents are available both physically and emotionally in times of need. As in childhood, they provide support and a secure base from which to explore.

Adolescents with a secure attachment feel secure in the availability of their attachment figures and in their own self-efficacy (Kenny & Rice, 1995).

In contrast, ambivalent adolescents tend to use hyperactivating strategies that result in being overly concerned with others' availability and generally would not feel comfortable becoming more independent. In a similar way, avoidant adolescents tend use avoidance strategies. Thus, they become overly independent and do not use their parents as a source of support. As with insecure children, insecure adolescents may not engage in exploring new things with the same interest or enthusiasm as secure adolescents as both of these attachment styles have been shown to be associated with increased dependence on parents (Allen et al., 1998; Shaver & Cassidy, 1999).

In addition to these types of individual differences, there has been some evidence suggesting gender differences in attachment security and/or the effects of security on other areas (such as adjustment). While there are no reported gender differences in attachment in children, some research suggests that college students report higher levels of attachment to mothers than to fathers but this is not a well-supported finding at this time (Haigler, Day, & Marshall, 1995). In addition, there have been a few studies suggesting that there attachment differences based on the gender of the child, and gender match of the parent and child (i.e., mothers-daughters versus mothers-sons) (Benson, Harris, & Rodgers, 1992; Kenny & Donaldson, 1992; Schultheiss & Blustein, 1994). These studies indicate that attachment constructs may be related to different aspects of functioning for male versus female college students and/or that attachment to the same sex parent may be particularly important for college students.

Stress Responses and Coping in Children and Adolescents

Stress, Stress Responses, and Coping Models in Adolescence

There are many different models specifically proposed to explain coping in children and adolescents. These models can be grouped by which dimensions of coping they use. The most commonly used dimensions of coping are problem-focused versus emotion-focused coping, primary control versus secondary control coping, and engagement (approach) versus disengagement (avoidance) (Compas et al., 2001). These dimensions are used to organize specific coping behaviors and coping goals. However, many of these models rely on overly simplistic models of coping that do not capture the multidimensionality of coping (Ayers, Sandler, West, & Roosa, 1996).

In an effort to more fully describe responses to stress, Connor-Smith, Compas, Wadsworth, Thomsen, and Saltzman (2000) proposed a multidimensional model of stress, stress responses, and coping. They argue that the wide range of stress responses may be best conceptualized as falling along two dimensions: voluntary versus involuntary and engagement versus disengagement. Voluntary responses are effortful, intentional behaviors while involuntary responses are immediate and automatic responses to stress (e.g. crying, physiological change). Voluntary responses are what are generally defined as coping strategies and include efforts to deal with the stressor as well as active efforts to distract one's self from the stressor. Involuntary responses are automatic stress responses, such as increased heart rate, crying, or shakiness. Connor-Smith et al.'s (2000) inclusion of involuntary responses to stress is essential because involuntary responses may facilitate or constrain a child's ability to initiate voluntary coping responses. Thus,

this model is comprehensive in that it not only describes "coping" but also automatic responses and the interaction between automatic and volitional responses. Therefore, generally throughout this paper, the term "stress responses" is used, which includes both coping and involuntary responses to stress. Occasionally, only coping was examined and at those times, the term "coping" is used.

Both voluntary and involuntary responses are further discriminated along the second dimension of engagement or disengagement. The engagement-disengagement dimension refers to how a person orients to the stress. Engagement responses involve orientation toward the stressor or the emotions stemming from the stressor (seeking support, problem-solving). Disengagement responses involve orienting attention away from the stressor or the emotions associated with the stressor. Stress responses can be categorized by where they fall on both of these dimensions (Compas et al., 2001; Connor-Smith et al., 2000). See Appendix B for more information.

Voluntary efforts that involve engagement can be broken down into those involving primary control and those involving secondary control. Primary control coping responses are an individual's attempt to exert control over the environment or his or her emotions. Secondary control responses involve efforts to adapt to the environment. This model for understanding coping and stress responses makes sense theoretically, and was supported by factor analysis (Compas et al., 2001; Connor-Smith et al., 2000; Weisz, McCabe, & Dennig, 1994). The relationships between these coping dimensions and psychological adjustment are well-supported. Engagement coping is associated with lower internalizing and externalizing symptoms and higher competence, while

disengagement is related to higher internalizing and externalizing symptoms and lower competence (Compas et al., 2001; Langrock, Compas, Keller, & Merchant, 2000).

Stress Responses, Attachment, and Adjustment

Attachment theory and research is inextricably tied to stress and coping. It is stress, such as fear, illness, hunger, or other distress, that prompts a child or adult to seek out his or her attachment figure (Kobak, Cole, Ferenz-Gelles, & Fleming, 1993; Kobak & Sceery, 1987). In infancy and in adulthood, primary and secondary attachment behaviors are methods for dealing with stress (Main, 1990). Based upon interactions with caregivers, individuals develop a characteristic way of coping with distress and caregivers (Ainsworth, 1985). Therefore, it can be extended that the experience of stress activates internal models of attachment, primary and secondary attachment strategies, and elicits differential responses to stress according to a person's style of attachment.

Kobak and Sceery (1988) proposed that "secure attachment would be organized by rules that allow acknowledgement of distress and turning to others for support, avoidant attachment by rules that restrict acknowledgement of distress and the associated attachment attempts to seek comfort and support, and ambivalent attachment by rules that direct attention toward distress and attachment figures in a hyper-vigilant manner that inhibits the development of autonomy and self-confidence" (Kobak & Sceery, 1998). This notion has received empirical support as securely attached individuals tend to use certain types of coping such as seeking social support, using problem-focused coping, and appraising situations in a non-threatening way, all of which are associated with good mental health (Carver et al., 1993; Connor-Smith et al., 2000; Kobak & Sceery, 1988;

Kobak Cole, Ferenz-Gillies, & Fleming,1993,Lichtman et al., 1984; Mikulincer & Florian, 1995).

In contrast, insecurely attached individuals usually expect others to be unresponsive to their needs and/or lack confidence in their ability to deal with distress resulting in fewer coping strategies (Kobak, 1999; Mikulincer & Florian, 1995/96; Simpson, Rholes, & Nelligan, 1992; West & Sheldon, 1992). Ambivalently attached individuals tend to focus on their distress, use more emotion-focused coping, and appraise events as being more stressful than securely attached individuals, which is related to maladjustment, particularly to anxiety and depression. Avoidant individuals tend to distance themselves from others and use avoidant coping strategies, also associated with maladjustment, especially drug and alcohol abuse (Collins & Feeney, 2000; Kobak & Sceery, 1988; Mikulincer, 1990; Ognibene & Collins, 1998).

Given that autonomy and autonomy-related conflict is a hallmark of adolescence, insecure adolescents may experience constant anxiety about their attachment relationships. Due to the redefinition of the parent-child attachment relationship in adolescence, threats to the attachment figure during this period may have devastating effects on the secure base function and, thus, adolescent adjustment.

Summary

The physical and psychological consequences of a cancer diagnosis and treatment can greatly impact the cancer patient's ability to care for, or parent his or her children. Consequently, children may be negatively affected by their parent's diagnosis of cancer and the toll it takes on a parent's physical and psychological health (Evans, Keenan, &

Shipton, 2007; Lewis, Ellison, & Woods, 1985; Nelson & Allen, 1994). Despite this recognition that parental cancer creates significant stress on the patient as well as the family, few researchers have empirically assessed the short and long-term effects of this stressor, and almost none have examined mechanisms through which cancer affects the child.

Research with children who have a parent with cancer has primarily focused on two main areas: (a) The effects of parental cancer on child and adolescent adjustment and (b) The relationship between coping strategies and mental health outcomes within a group of children who have a parent with cancer. These issues have been adequately addressed in the literature and the findings suggest that: (a) Parental cancer is indirectly associated with both internalizing and externalizing disorders as well as social and school problems in children and adolescents (see Armistead et al., 1995 and Worsham et al., 1997 for a review), and (b) Disengagement coping strategies are related to poor mental health outcomes, especially internalizing disorders in children and adolescents who have a parent with cancer (Compas et al., 1996; Compas et al., 2001; Connor-Smith et al., 2000; Steele et al., 1997). Some initial studies have attempted to identify aspects of cancer and characteristics of the family or child that may impact adjustment and coping (Steele et al., 1997). However, these are preliminary in nature and limited in scope.

While these main fields of research provide useful information, they are limited in that: most rely only on one reporter (which may not fully capture family problems), they generally lack comparison groups, and perhaps most importantly, they lack theoretical basis and fail to identify mechanisms of influence (Armistead et al., 1995; Steele et al.,

1997). However, attachment theory can be used as a developmental model to integrate these schools of thought into a developmental model that elucidates the ways in which parental cancer affects adolescent coping and adjustment.

There are many similarities in the research findings in the areas of parental cancer and attachment. For example, parental cancer is related to adolescent avoidant coping, stress responses, depression, anxiety, externalizing disorders, school absenteeism, and poor peer relationships (see Worsham et al., 1997 or Armistead et al., 1995 for a review). Similarly, research on attachment indicates that attachment is associated with coping and adjustment. Specifically, secure attachment is linked to active coping strategies such as problem-solving or social support and is related to good mental health. In contrast, insecure attachment relates to avoidant coping, stress responses, lack of coping strategies and has been shown to be associated with depression, anxiety, externalizing disorders, and poor peer relations (Armsden & Lewis, 1993; Collins & Feeney, 2000; Hazan & Shaver, 1994; Mikulincer & Floiran, 1995; Shaver & Cassidy, 1999; Waters et al., 2000). Additionally, while limited, research indicates that attachment security may decrease in relation to negative life events such as illness or death of a parent and preliminary research suggests that the parent-child relationship may be an important contributor to adjustment of adolescents who have an ill parent (Steele et al., 1997). Thus, investigation of attachment and adolescent coping as mediators and moderators can be used to understand how the physical and psychological effects of cancer translate into anxiety and depression in children of cancer patients.

Statement of Purpose

This study broadened current conceptions about the influence of parental cancer on adolescents by combining several important areas of research to form a comprehensive model. The well-established framework of attachment theory (which emphasizes the importance of the parent-child relationship as the foundation for many aspects of the child's development) is used to organize recently gained knowledge about the effects of parental cancer on children and adolescents' coping styles and adjustment. According to attachment theory, the development of a secure attachment bond with a parent stems from the parent's responsive and consistent care, including the provision of physical comfort and emotional support, and serving as a secure base from which the child can explore his or her environment (Bowlby, 1969, 1973, 1988). Parental attachment bonds are associated with a child's coping and adjustment, with secure bonds leading to good coping and psychological adjustment, and insecure bonds leading to poor coping and maladjustment (Kobak & Sceery, 1988). Parental inconsistency and insecurity of the attachment bond can result from many different sources such as parental mental illness, marital conflict, or absence of the parent (Greenberger & McLaughlin, 1998).

While these areas have received attention, the larger issue of parental medical illness has been overlooked. However, many medically ill people, cancer patients in particular, have one or more of these problems that lead to insecure parent-child attachment. For example, the physical and psychological effects of a cancer diagnosis and treatment on the patient, as well as the threat of death, may limit his or her ability to be

responsive to his or her child's attachment needs. Thus, it can be hypothesized that the parent-child attachment bond is especially at risk in families that have a parent with cancer.

Therefore, the principal goal of this study was to test a theoretical model describing the relationships between parental cancer, security of adolescents' attachment to parents, adolescent coping strategies, and adolescent adjustment. Secondary hypotheses for the project are outlined below and represent evaluation of the individual components of the larger model. Many analyses were run: some comparing the target and comparison group, some combining the two groups, and some within the cancer group only.

Primary Hypothesis

The primary goal of the study was to test a mediational model whereby attachment and coping mediate the effects of parental cancer on adolescent adjustment. It was proposed that the effects of cancer on the patient (physically and psychologically) influence the attachment system by disrupting proximity seeking, safe haven, and secure base functions thereby negatively impacting security of attachment. Thus, it was expected that parental cancer causes increased insecurity of attachment to parents as children are unable to get their primary attachment needs met, and must resort to secondary attachment strategies. This insecurity of attachment leads to involuntary stress responses and voluntary disengagement as a general strategy of responding to stress. These stress responses are not generally effective and lead to maladjustment. Thus, adolescents faced with parental cancer will become more insecurely attached to their parents, and will

therefore tend to use voluntary disengagement strategies and have involuntary stress responses, resulting in internalizing and externalizing disorders. These relationships are depicted in Figures 1-5.

Secondary Hypotheses

Between groups comparisons. Adolescents who have a parent with cancer were hypothesized to have higher rates of avoidant, ambivalent, and fearful attachment styles, and lower rates of secure attachment style than the comparison group. In addition, adolescents who have a parent with cancer were expected to have higher scores on scales measuring anxiety surrounding: proximity seeking, separation protest, feared loss, availability of caregiver, and use of the attachment figure than the comparison group.

Given that adolescents with a parent with cancer were expected to have higher insecure attachment, it was also expected that they would show lower levels of primary and secondary control, higher disengagement, higher involuntary engagement and higher involuntary disengagement which are related to maladjustment.

Furthermore, the cancer group was expected to have higher levels of self and parent reported distress and lower overall adjustment (BASC) than the comparison group. However, given the variability found in past research, it was anticipated that there would moderating and/or mediating variables that may account for these differences.

Relationships among variables with groups combined. Several hypotheses were made about how attachment, coping, and adjustment would be related regardless of cancer status. These would allow for understanding of these concepts in a more general manner. Thus, in terms of attachment, it was expected that anxiety about: proximity

seeking, separation protest, feared loss, availability of caregiver, and use of the attachment figure would be related to poorer coping skills and more stress responses. In addition, individuals with a secure attachment style were hypothesized to use more adaptive coping skills, less disengagement, and have fewer involuntary stress responses than the insecure attachment styles. Furthermore, specific predictions were made as to the coping profiles of the insecure styles of attachment .For example, ambivalent attachment would be associated with low primary and secondary control (except for an expected high score on emotional expression), low effortful disengagement, high involuntary engagement, and low involuntary disengagement. Overall, it was expected that ambivalent adolescents will use all volitional coping styles less often than other coping styles. Avoidant attachment was anticipated to be particularly associated with higher involuntary engagement and disengagement, and effortful disengagement, and lower primary and secondary control. Fearful attachment was thought to be related to low voluntary engagement, and high involuntary disengagement and engagement.

Stemming from these hypotheses about coping and what has been shown in the literature, it was expected that securely attached individuals would report less distress and better adjustment on both parent and self report measures. Specifically, secure style was expected to be positively related to self-reported overall personal adjustment (SR-PAdj), and negatively related to: self-reported emotional symptoms (SR-ESI), self-reported clinical maladjustment (SR-CMal), self-reported school maladjustment (SR-SMal), and self-reported social stress/anxiety/depression triad (SR-SAD), as well as parent-reported internalizing symptoms(PR-Int) and parent-reported externalizing symptoms (PR-Ext).

Ambivalent style was expected to be positively related to SR-ESI, SR-CMal, SR-SAD, PR-Int, and negatively related to SR-PAdj. Avoidant style was expected to be related to PR-Ext. Fearful was proposed to be positively related to SR-ESI, SR-CMal, SR-SMal, SR-SAD, PR-Int, PR-Ext, and negatively related to SR-PAdj.

In terms of the relationship between coping and adjustment, several hypotheses were made. Primary control and secondary control were expected to be positively associated with SR-PAdj and negatively associated with: SR-ESI, SR-CMal, SR-SMal, SR-SAD, PR-Int, and PR-Ext. Effortful disengagement would be positively associated with all of these symptom scales, especially parental report. Involuntary engagement would be associated with lower SR-PAdj and higher SR-ESI, SR-SAD, and SR-CMal. Possible effects of gender were examined in the analyses.

Within cancer group comparisons. To identify important variables for adolescents dealing with a parent with cancer, several hypotheses were tested within the cancer group only. For example, attachment style, coping, and adjustment were examined by cancer stage and perceived severity of illness. It was expected that perceived severity of illness would be more influential than stage. Additional cancer-related variables were examined with regard to attachment, coping, and adjustment. Some of these variables included: how much information was given to teens, the number of cancer-related stressors that teens reported, parental mental health, and teens' physical health. Lastly, in addition to being a mediating variable, attachment security may function as a moderator affecting how parental cancer impacts adjustment. Therefore, potential moderating effects of attachment security on adjustment to illness were examined.

CHAPTER II

RESEARCH DESIGN AND METHODS

Participants and Recruitment

Participant Information

This project was a cross-sectional study using pencil and paper questionnaires. Completed information was gathered from 44 cancer patients and 43 of their adolescent children (constituting the target group) as well as a matched comparison group (37 teens and 37 parents). One additional target child received the measures but failed to complete them.

As anticipated, there were many similarities between the target and comparison groups. With regard to the parent groups, the two groups were similar on parent ethnicity with the majority of the sample being Caucasian (86-87%). Parents were also comparable in terms of marital status with 79.5 % of the target group being married and 91.5% of the comparison group being married ($p=.41$). The groups were similar in gender with 29 of the comparison and 35 of the target parents being female, and 7 of the comparison and 9 of the target parents being male. There was, however, a significant age difference between the groups ($F=8.19$, $p<.05$). The mean age of the target group was 46.2 years with a range from 30.0 years to 54.3 years ($SD=5.6$) whereas the mean for the comparison group was 42.5 years with a range from 32.3 years to 60.6 years ($SD=5.9$). There was also a trend toward comparison parents having higher incomes than parents

with cancer (p=.12). Family income for the comparison group had a mean in the range of $60-75,000 while the target group tended to average in the $45-60,000 range. See Table 1 for overall sample characteristics.

In addition to general information, the target parents also provided cancer specific information. In this sample, the average time since diagnosis for the cancer group was 6.9 months (SD=4.6) with a range from 1 to 15 months. Not surprisingly, the majority of the sample was diagnosed with breast cancer (59%), followed by lung cancer (4.5%), colorectal cancer (2.3%), and prostate cancer (2.3%). An additional 32% reported have another type of cancer than was indicated on the questionnaire. The group was diverse in terms of stage of cancer with 38% of the sample having a Stage 1 diagnosis, 33% of the sample a Stage 2 diagnosis, 4.4% Stage 3 diagnosis, and 7% a Stage 4 diagnosis. In addition, another 18% of the sample reported not knowing their cancer stage at diagnosis. Lastly, of this sample, 3 of the 44 cancer parents had previously been diagnosed with cancer.

The adolescent groups were also similar demographically. The mean age for the comparison group was 15.3 years (sd=1.7) with a range from 12.5 to 18 years. The mean age for the target group was 15.6 years (sd=1.6) with a range from 12 to 18 years. They were also similar in terms of gender with the comparison group having 15 boys and 21 girls and the target group having 21 boys and 23 girls. There were also no group differences in adolescents' ethnicity (78-81% Caucasian), GPA (3.53-3.54), or kid's reported health status (majority reporting excellent or very good). See Table 2 for adolescent demographics.

Recruitment Procedures

Recruitment for this study faced many challenges and spanned over two years. Participants were to be recruited for the target group (parents with cancer). The comparison group was to be obtained by referral from the target group. There were issues in recruitment for both the target group as well as the comparison group, and modifications were required during the study.

Originally, target participants were to be recruited from the cancer registries of two large academic medical hospitals: the Comprehensive Cancer Center at Wake Forest University (CCCWFU) and the Lineberger Comprehensive Cancer Center at the University of North Carolina at Chapel Hill. However, there were several problems with this plan. First, we were unable to gain IRB approval from the Linebeger CCC as they required us to employ one of their staff psychologists as a consultant, which we were unable to do. In addition, it was quickly recognized that there is often a delay of six months to one year from when someone is diagnosed with cancer and when they are added to the registry. Thus, by the time they were added to the registry, many patients had already passed one year post diagnosis. Lastly, an unexpected problem arose within our parent population. Many parents with cancer did not tell their teenage children. Given that the teens were between 12 and 18, this was not predicted to be a frequent occurrence. However, over time it became clear that the numbers of parents who did not talk with their teens about their diagnosis were quite large. In the current study, there were 18 such cases where individuals contacted about the study explicitly stated that they had not informed their adolescent of their diagnosis. In addition, most of the recruitment for this

study was done via flyers and it can be hypothesized that many individuals who had not disclosed their cancer diagnosis simply did not pick up a flyer. As knowledge of parental cancer was required for participation, these teens were ineligible to participate in the study.

Several steps were taken to remedy these issues. First, several additional cancer centers were added to the recruitment sites. These included: the Duke Brain Tumor Center, Rex Healthcare, and Moses Cone Hospital. In addition, some participants were recruited through cancer support networks, such as the American Cancer Society. Secondly, recruitment strategies were broadened to include fliers, physician referral, and advertisements. This allowed us to reach patients that were more recently diagnosed with cancer. These were all relatively successful, especially the fliers. In terms of parents not informing their teens about their diagnosis, we were unable to remedy that situation without altering the study.

Participants for the comparison group were to be identified by nomination from families in the target group. Target adolescents were asked to refer two same sex friends and their parent (matched by sex to the target parent) to participate. The families that they referred were to be unaffected by illness in the parent or child. This type of nomination generally results in relatively matched groups as friends tend to be similar on many dimensions. Participants were then screened by phone for inclusion or exclusion in the study based on the eligibility criteria provided below. While generally successful, there were some limitations to this recruitment strategy as well. The most common difficulty was that many target families had not discussed their cancer diagnosis and

treatment with individuals outside of their immediate family. Thus, they were not comfortable referring anyone to the study. However, there were sufficient referrals to allow for a reasonable sized comparison group.

Participant Eligibility

Inclusion and exclusion criteria were designed to ensure that the variables of interest can be studied while at the same time reducing the introduction of extraneous variables and error into the study.

Eligibility Criteria for Target Families (those in which the parent has cancer):

1. At least one parent in the family was diagnosed with cancer of any stage within 12 months of recruitment.
2. Parent participants were included if they were currently in treatment at the time of the study or had completed treatment within 6 months of recruitment, but were diagnosed with cancer in the past year.
3. The parent with a diagnosis of cancer has an adolescent child between the ages of 12-18. If a family had two children between the ages of 12 and 18, the child closest to age 15.0 years was selected.
4. Recruitment targeted adolescents living with the ill parent.
5. The adolescent had to be aware that the parent has cancer and is in need of treatment.

Exclusion Criteria for Target Families:

1. Either parent had a history of serious physical illness other than cancer such as Multiple Sclerosis, Diabetes, or Heart Disease.
2. The child or one of his/her siblings had a history of serious physical illness.
3. Parents and/or child were unable to speak English or read at a 5th grade level.
4. The child was adopted after age 6 months.

Eligibility Criteria for Comparison Families (generally referred by the target family):

1. The parent has an adolescent child between the ages of 12-18.
2. The adolescent is the same sex as the target child.
3. The participating parent is the same sex as the target parent. Again, recruitment targeted families who are similar to the target family.

Exclusion Criteria for Comparison Families:

1. Parents or child had a history of serious physical illness.
2. Parents and/or child were unable to speak English or read at a 5th grade level.
3. The child was adopted after age 6 months.

Data Collection Procedures

General Procedures

Regardless of the recruitment source, all participants were given general information about the project demands as well as the potential risks and benefits. Interested individuals were then screened for eligibility over the phone. If eligible, they were then asked to participate in the study and were mailed a packet of information including all

consents/assents and assessment measures. Instructions were given for adolescents and parents to complete the measures independently. In addition, they were provided with separate return envelopes in an effort to reduce social desirability. After completing the measures, they then returned them by mail using pre-stamped envelopes that were provided. Teens and parents received separate envelopes to reduce social desirability. Participants returning the measures were given $75.00 per family for their participation. This study was funded by the National Cancer Institute.

Assessment Measures

Target Parents (Cancer Patients):

1. Health and Background Questionnaires- (copies of all measures are in Appendix D).

    a. *Demographic Information* includes: name, gender, marital status, telephone number, date of birth, social security number, racial/ethnic group, occupation, education, family income, and name, address, and telephone number of relative or friend not living with the family.

    b. *Family Characteristics* includes: the number of people living in the home, names and ages of children living in the home, major changes in family structure (such as divorce), and identification of primary caregiver.

    c. *Personal Medical History* includes: history of serious illnesses, number of hospitalizations lasting one week or more, number of major surgeries, a checklist of health behaviors, and overall rating of current and past health, date of

diagnosis, cancer stage, prognosis, site, and treatment history, length, and information about the onset of illness.

d. *Psychosocial Adjustment to Illness*: Cancer patients' psychosocial adjustment to their illness was evaluated using the Psychosocial Adjustment to Illness Scale-Self Report (PAIS-SR) (Derogatis & Lopez, 1983). A cancer patient's adjustment to illness has a great impact on his or her physical health, psychological well-being, and influences all members of the family. Better adjustment of a patient is associated with good mental health outcomes in his or her spouse and children (Rose, West, Brewis, & Hillson, 1997). The PAIS-SR is a frequently used self-report measure that assesses seven areas of psychosocial functioning in medical patients and provides a total adjustment score. The PAIS-SR provides information about overall adjustment, relative assets and liabilities, and aspects of adjustment that are unique to the individual. This scale has been used in over 80 studies and demonstrates high reliability, solid factor structure, and high test-retest reliability (Hoskins & Budin, 2000). In addition, longitudinal research supports the predictive validity of the PAIS-SR in cancer patients (Kreitler et al., 1997).

2. Mental Health Questionnaires- Parent report of adolescent mental health and of their own mental health.

a. Behavioral Assessment for Children (BASC) (Reynolds & Kamphaus, 1992). (Appendix D). Most research studies investigating the adjustment of children and adolescents who have a parent with cancer fail to assess the range of emotional

and behavioral problems these children face (Steele et al., 1997; Worsham et al., 1997). Rather than focusing solely on internalizing disorders, such as depression, or externalizing behavioral problems, the current project more fully assessed adjustment using the BASC. The BASC is a widely used set of measures evaluating the behaviors, thoughts, and emotions of children and adolescents (Reynolds & Kamphaus, 1992). This instrument provides information on internalizing and externalizing problems as well as adaptive skills. There are several versions of the measure that are intended to be completed by different reporters including a self-report, parent-report, and teacher-report. Each of these versions of the BASC has separate forms for different age groups. The BASC has been used in a variety of populations and demonstrates solid reliability and validity as a measure of child and adolescent adjustment (Reynolds & Kamphaus, 1992). The parent completed the age-appropriate parent-report form of the BASC about his or her child's behavior. Scores were derived from this measure including parent-reported internalizing problems (PR-Int) and parent-reported externalizing problems (PR-Ext).

b. Brief Symptom Inventory (BSI) (Derogatis & Spencer, 1982).(Appendix D). The mental health of a parent greatly affects his or her parenting abilities, the quality of the parent-child relationship, the parent's availability to the child, and the ability of the parent to meet the child's needs (Lewis et al., 1985). Mental health and depression, in particular, has been linked to insecurity of attachment (Armsden & Lewis, 1993; Hamilton, 2000; Shaver & Cassidy, 1999). The BSI is

a commonly used instrument providing an overview of mental health in nine main categories. The BSI is a shortened version of the Symptom Checklist-90, a well-recognized measure of mental health (Derogatis & Spencer, 1982). The reliability, validity, and utility of the BSI have been shown in over 400 studies (Hoskins & Budin, 2000). In addition, norms are available for several groups (non-patient, inpatient, outpatient, and adolescents). The parent completed this measure about his or her own mental health.

3. Parent Report of Adolescent Coping

a. Responses to Stress Questionnaire (RSQ) (Connor-Smith et al., 2000). The RSQ is a theoretically-based and psychometrically sound measure of coping in adolescence (Compas et al., 2001; Connor-Smith et al., 2000). The RSQ is based on a model of coping that distinguishes voluntary from involuntary responses as well as responses requiring engagement versus disengagement. Voluntary efforts can be further broken down into primary (aimed at altering the situation) and secondary (aimed at adapting to the situation). Primary voluntary engagement involves problem-solving, emotional regulation, and regulated emotional expression. Secondary voluntary engagement includes acceptance, cognitive restructuring, positive thinking, and distraction. Voluntary efforts that involve disengagement are denial, avoidance, and wishful thinking. Involuntary responses to stress that are high on engagement include rumination, intrusive thoughts, emotional arousal, physiological arousal, and impulsive action. Involuntary disengagement responses are emotional numbing, cognitive interference, escape,

and inaction. Refer to Appendix B for examples of each type of stress response. This measure was designed to include a broad range of coping strategies that better address adolescent coping. Often, emotional efforts have been framed in a negative way, underestimating their function as an adaptive coping strategy. On some items, adolescents are asked to provide examples of the coping strategy that they used (to whom they talked rather than social support overall) to reduce social desirability. The RSQ asks adolescents to report on a particular stressor as coping is expected to vary with the nature of the stress. The RSQ has been used with stressors such as social stress, parental depression, economic strain, family conflict, and pain (see Compas et al., 2001 for a review). The RSQ has an adolescent version and a parent version to allow for collateral report. There are 2 sections of the RSQ. In section one, an individual indicates which of the provided stressors that his or her adolescent has experienced and rates on a Likert scale, how distressing these stressors are. Section two includes 57 items, representing a range of voluntary and involuntary responses to stress. The respondents rate each item on a scale from 1 to 4. In addition, there are initial questions that ask the respondent to report on recent stress in the problem domain, the degree of stressfulness of the events, and their perceived control of the stressors.

The RSQ demonstrates good test-retest reliability, solid internal consistency, solid factor structure, and convergent validity with other coping measures (Compas et al., 2001; Connor-Smith et al., 2000). The RSQ is also related to expected constructs such as psychological adjustment and physiological

arousal (Compas et al., 2001; Connor-Smith et al., 2000; Thomsen, Compas, Colletti, & Stanger, 2000; Wadworth & Compas, 2000; Weisz, McCabe, & Dennig, 1994). As the measure is situation specific, parents completed this measure about their adolescent child's coping with parental cancer. The RSQ responses to stress can be analyzed using raw scores, proportional scores, or ratio scores. Typically, researchers studying coping use proportional or ratio scores rather than raw scores to help to control for the correlation between higher reported coping and higher levels of stress. Thus, one is able to get an assessment of an individual's most frequently used coping and stress responses separate from his or her current stress level. Proportional scores provide a measure of how often a person has a particular stress reaction/coping strategy in comparison to his or her other reactions/coping strategies. It is calculated by dividing the score for one of the five stress responses by the sum of all stress responses. In this study, proportional scores were typically used in the analyses. Occasionally, ratio scores were used as is indicated in the text. In contrast to proportional scores, ratio scores provide a measure of only active coping (not involuntary stress responses) and are calculated by dividing one's score on one of the three volitional coping scales by the sum of all of their effortful coping strategies.

Comparison Parents

1. Health and Background Questionnaires

a. *Demographic Information* includes: name, marital status, telephone number, date of birth, social security number, racial/ethnic group, occupation, education,

family income, and name, address, and telephone number of relative or friend not living with the family.

b. *Family Characteristics* includes: the number of people living in the home, names and ages of children living in the home, major changes in family structure (such as divorce), and identification of primary caregiver.

c. *Personal Medical History* includes: history of serious illnesses, number of hospitalizations lasting one week or more, number of major surgeries, a checklist of health behaviors, and overall rating of current and past health.

2. Mental Health Questionnaires

a. Behavioral Assessment for Children (BASC) The parent completed the age-appropriate parent-report form of the BASC about his or her child's behavior (see *target parent* for a description of this measure)

b. Brief Symptom Inventory (BSI) The parent completed this measure about his or her own mental health (see *target parent* for additional information).

3. Adolescent Coping

a. Responses to Stress Questionnaire (RSQ) Parents completed this measure about their adolescent child's coping with social stress. The social stress version of this measure has been previously used in the literature and includes problems related to making friends, conflict with other teenagers, interpersonal relationships, and loneliness (Connor-Smith et al., 2000).

Target Adolescent Measures (adolescents with parent with cancer)

1. Health and Background Questionnaires

    a. *Demographic Information* includes: their name, telephone number, date of birth, social security number, racial/ethnic group, education, and name, address, and telephone number of relative or friend not living with the family.

    b. *Family Characteristics* includes: the number of people living in the home, names and ages of children living in the home, major changes in family structure (such as divorce), and identification of primary caregiver.

    c. *Parent's Medical History* includes adolescent report of parental history of: serious illnesses, number of hospitalizations lasting one week or more, number of major surgeries, a checklist of health behaviors, and overall rating of current and past health. The adolescent reported on the parent's date of diagnosis, cancer stage, prognosis, site, and treatment history, length, and information about the onset of illness. In addition, they rated their perceptions of the severity of their parent's illness. Most of these items used a likert-scale format.

2. Adolescent Mental Health Questionnaires

    a. Behavioral Assessment for Children (BASC) (Reynolds & Kamphaus, 1992). (Appendix D). See "Parent Measures" for a detailed description of this measure. The adolescent completed the self-report version of this measure about his or her own mental health. In contrast to other assessments, the BASC provides a measure of overall personal adjustment (SR-PAdj), which includes variables assessing overall competence such as: self-esteem, self-reliance, and interpersonal

relationships. It is often conceptualized to be a good indicator of coping, support, and resilience. There are also scales assessing more problematic symptoms such as: the emotional symptoms scale (which generally signals serious emotional problems), the clinical maladjustment scale (generally thought of as internalizing problems), school maladjustment (adaptation to school), and social stress/anxiety/depression triad (generally indicating severe, acute distress). This provides more information than assessment measures that assess only internalizing and externalizing disorders.

3. Adolescent Attachment Security and Behaviors

a. Relationship Questionnaire (RQ) Ainsworth's original observations of attachment behaviors in children led her to create a classification system for patterns of attachment. Attachment styles are often used to discuss infant and adult attachment. Three attachment styles, secure, avoidant, and ambivalent, comprised the first set of attachment categories (Ainsworth, 1985). Since then, based on theory and supported by empirical research, a fourth pattern was added, labeled fearful. The four-category RQ was designed after the widely-used three-category attachment measure by Hazan and Shaver (1994). The RQ is a very brief measure consisting of a multi-sentence description of each of the four attachment styles. Respondents are asked to choose which description best characterizes them. The RQ is widely used and demonstrates solid reliability and correlations with more intensive measures of attachment style (Shaver & Cassidy, 1999). The RQ has also been shown to relate to parental responsivity, loss or trauma, coping,

adjustment, and marital satisfaction (Shaver & Cassidy, 1999). Adolescents were asked to pick which description best characterizes them at this time. In addition, adolescents then read the same descriptions (but in past tense) and picked which best describes how they were one year ago. This allowed for some comparison (although biased) of present and past attachment style.

b. Reciprocal Attachment Questionnaire (RAQ) (West & Sheldon, 1992). The RAQ is an attachment measure that provides somewhat different information about attachment than the RQ. While the RQ measures attachment style, the RAQ operationalizes the component of the attachment system in adolescents and adults; proximity seeking, separation protest, feared loss, availability, and the use of the attachment figure. These components allowed an examination of the effects of parental variables (such as cancer) on each attachment need individually. Participants were asked to complete the measure based on their relationship with their parent that has cancer. There are three items for each scale with each item scored on a 5-point likert-scale, providing a continuous measure for each area (West & Sheldon, 1992). Higher scores on these items reflect greater anxiety about these attachment needs. For example, a higher score on use of the attachment figure means that the individual has more anxiety about using his or her attachment figure. The RAQ has been demonstrated to have solid factor structure, reliability, and relates to other established measures of attachment (Shaver & Cassidy, 1999; West & Sheldon, 1992). The RAQ has also been used in medically ill populations (Rose, West, Brewis, & Hillson, 1997).

4. Coping

a. Responses to Stress Questionnaire (RSQ) (Connor-Smith et al., 2000). See "Parent Measures" for more detail on this measure. As the RSQ is situation-specific, target adolescents completed the RSQ, with regard to their coping with their parent's illness. They also completed a version oriented toward social stress to allow for contrast with the comparison group. Interpersonal or "peer stress" has been demonstrated to be more predictive of adolescent behavior problems than other types of stress (e.g. school stress) and is viewed to be of extreme importance in adolescence (Compas et al., 2001; Malcarne & Fondacaro, 1988). Both versions of the measure included a section for identifying number and degree of stressors as well as a section for rating one's stress responses. See Appendix B for examples.

Comparison Adolescent

1. Health and Background Questionnaires

a. *Demographic Information* includes: name, telephone number, date of birth, social security number, racial/ethnic group, education, and name, address, and telephone number of relative or friend not living with the family.

b. *Family Characteristics* includes: the number of people living in the home, names and ages of children living in the home, major changes in family structure (such as divorce), and identification of primary caregiver.

c. *Personal Medical History* includes adolescent report of parental history of: serious illnesses, number of hospitalizations lasting one week or more, number of major surgeries, a checklist of health behaviors, and overall rating of current and past health.

2. Mental Health Questionnaires

a. Behavioral Assessment for Children (BASC) The adolescent completed this measure about his or her own mental health (see "target adolescents" for a description).

3. Adolescent Attachment Security and Behaviors

c. Relationship Questionnaire (RQ) The RQ is a very brief measure consisting of a multi-sentence description of each of the four attachment styles. Respondents were asked to choose which description best characterizes them at this time. In addition, adolescents then read the same descriptions (but in past tense) and picked which best describes how they were one year ago. See above for more detail.

b. Reciprocal Attachment Questionnaire (RAQ) Participants were asked to complete the measure based on their relationship with the parent that is participating in the study. Participants answered 15-items based on their relationship with the identified attachment figure. There are three items for each scale with each item scored on a 5-point likert-scale, providing a continuous measure for each area.

4. Coping

a. Responses to Stress Questionnaire (RSQ) (see above for detail) Comparison adolescents completed the measure based on how they cope with social stress.

CHAPTER III

RESULTS

There were several objectives to this study centering around the validation of an explanatory model of the effects of parental cancer on adolescent adjustment. The primary aim was to compare the security of attachment to parents among adolescent children of cancer patients to the attachments of adolescents with no history of parental cancer. This included testing mediated and moderated models of the effects of parental cancer on adolescent adjustment, using attachment and coping as mediators or moderators. SEM was to be used for this analysis and it was estimated that groups of 100 dyads would be required to have adequate power for SEM. This number was not able to be obtained. Thus, mediation and moderation were tested using alternative approaches.

The secondary objectives of this study included: investigation of the relationship between attachment security and coping style, as well as measurement of the association between coping strategies and psychological adjustment. These variables were examined within the cancer group alone, as well as with both groups combined.. In addition, many other variables were investigated to help identify covariates.

Given the sample size and bounded outcome measures, classical Neyman-Pearson accept/reject hypothesis testing was used. In many analyses, relevant variables such as gender were included as covariates to reduce error if it is deemed appropriate (not to

control for the mean). For each aim and analysis, appropriate contrasts were done that are consistent with the hypotheses. In addition, in models where attachment style was included as a categorical variable, all fours styles were considered within the model. A summary table of results is located in Appendix C.

Descriptive Statistics

Data were analyzed using the SPSS software program (version 15.0) for Windows. Prior to analyses, data were checked for normality, skewness, and kurtosis to assure that the assumption of normality was met. Results indicated that the assumption of normality was met for almost all measures (skewness values ranged from -.08 to 1.2; kurtosis values ranged from -.58 to 1.1). The exceptions to this were self-reported personal adjustment on the BASC with a skewness of -2.1 and kurtosis of 6.3 and BSI with a kurtosis of 4.4. Thus, these 2 scales were converted to z-scale and z-scores were used in the analyses. A check of the residuals scatterplot for each measure showed no violations of the assumptions for regression analyses. Given that many of the scales and measures were anticipated to be correlated, most analyses were run as MANOVAs or MANCOVAs. Further, reliability estimates were obtained for the continuous measures, with overall good levels of internal consistency (range from .77 to .96). See Table 3 for further information.

Between Group Comparisons

Attachment. Adolescents who have a parent with cancer were hypothesized to have higher rates of avoidant, ambivalent, and fearful attachment styles, and lower rates of secure attachment style than the comparison group (as measured on the RQ).

Differences in attachment style between the target and comparison groups were examined using a Pearson chi-square test. The relation between these variables was significant, X^2 (3, N=81)= 8.17, p<.05. Teens that have a parent with cancer were less likely to be securely attached and more likely to have avoidant, ambivalent, and fearful attachment styles than the comparison group. However, the two groups were not different on past attachment security scores. Cell percentages are depicted in Figure 6.

Furthermore, adolescents who have a parent with cancer were expected to have higher anxiety about proximity seeking, separation protest, feared loss, availability, and use of the attachment figure than the comparison group (as measured on the RAQ). We simultaneously tested the association of group (cancer or comparison) and RAQ scale scores using MANOVA, with the omnibus F-test being non-significant (F=.82, p=.54). Follow-up one-way ANOVAs were conducted to investigate the effects of group on specific attachment behaviors. Only feared loss and anxiety over use of the attachment figure were significant, F(1,81)=3.07, p<.05 and F(1,81)= 2.87, p<.05, respectively. Teens in the cancer group reported higher feared loss of attachment figure (M=5.40, SD=2.48) than comparison teens (M=4.50, SD=2.05). The cancer group also reported higher anxiety about using their attachment figure (M=7.35, SD=2.43) than the comparison group (M=6.45, SD=2.33).

Coping and responses to stress. Given that adolescents with a parent with cancer were expected to have higher insecure attachment, it was also expected that they would show different levels of self-reported coping strategies and stress responses on the RSQ. Both groups completed the social stress version of the RSQ allowing for comparison of

their coping and stress responses. (Cancer teens also completed a cancer specific version which was used in the within group analyses). In general in these analyses, as with most research, proportional scores were used because higher rates of coping/stress responses are typically reported by adolescents facing more stress (Connor-Smith et. al., 2000). We are more interested in how often each strategy is used in comparison to the others than in simple rates of use. For instance, it is more significant if one teenager most frequently uses active disengagement while another uses primary control most often rather than the overall levels of these strategies for the two teenagers.

It was anticipated that the cancer group would show lower proportional rates of Primary and Secondary Control, and higher proportional active Disengagement, Involuntary Engagement and Involuntary Disengagement. MANCOVA was used to test this hypothesis with group predicting proportional responses to stress with gender as a covariate.

Overall, the MANCOVA indicated that there was a significant difference between the cancer and comparison groups on responses to social stress ($F(4,74)= 2.78$, $p<.05$). However, follow-up univariate tests were not significant, suggesting an overall effect rather than a more specific relationship. An additional MANCOVA was conducted looking at ratio coping scores rather than proportional scores by cancer group with gender as a covariate. While proportional scores represent the ratio of one stress response to all of the five stress responses (both voluntary and involuntary), ratio scores pertain only to the three types of voluntary coping (Primary control, Secondary control, and Effortful Disengagement). Ratio scores provide a measure of the relative amount of one

type of voluntary coping strategy to the three total types of coping strategies. Thus, ratio coping scores can provide a gauge for an individual's volitional attempts to cope with a problem regardless of their involuntary stress reactions. This MANCOVA was significant ($F(2,76)= 4.41$, $p<.05$. Univariate tests revealed that teens in the comparison group more often used Primary Control Engagement Coping (M=.38, SD=.11) than in the cancer group (M=.31, SD=.13), $p<.05$. However, teens in the comparison group were significantly less likely to use Secondary Control Engagement coping (M=.41, SD=.09) than teens in the cancer group (M=.47, SD=.11), $p<.05$. See Table 4.

Adjustment. The cancer group was expected to have higher levels of self and parent reported distress and lower overall adjustment (BASC) than the comparison group. Separate analyses were run for self-reported BASC and parent-reported BASC. There were moderate correlations between the parent and self reported BASC as presented in Table 5. However, the subscales that are provided for the two versions differ, thus limiting the ability to compare the measures.

In terms of self-report, A MANCOVA (with gender as a covariate) was conducted to examine group effects on self-reported overall personal adjustment (SR-PAdj), self-reported emotional symptoms (SR-ESI), self-reported clinical maladjustment (SR-CMal), self-reported school maladjustment (SR-SMal), and self-reported social stress/anxiety/depression triad (SR-SAD) was conducted. This test was not significant suggesting that there was no direct effect of cancer group on adjustment or emotional symptoms ($F= .26$, $p=.62$).

An additional two-factor (group x attachment style) MANCOVA was conducted (with gender as a covariate) to examine group and attachment style differences, and any interactions between group and attachment style on distress and adjustment. In this analysis, the categorical variable of attachment style was added first in a MANCOVA using type 1 sums-of-squares to allow us to "control" for the effects of this non-continuous measure. There was a relationship between cancer status and SR-ESI after controlling for attachment style ($F= 5.15$, $p<.05$). In this case, the cancer group reported fewer emotional symptoms (SR-ESI) ($M=1.80$, $SD= 3.32$) than the comparison group ($M=2.21$, $SD =3.79$). The comparison group reported higher levels of symptoms for all attachment styles except fearful, where the levels of symptoms were equivalent. Compared to age-related norms, the comparison group reported slightly above average levels of symptoms while the cancer group reported slightly below average numbers of symptoms. The interaction term was not significant ($F=1.62$, $p=.19$). Furthermore, the target and comparison groups did not differ on overall personal adjustment (SR-PAdj), even after attachment was controlled ($F=.23$, p-.61).

Similar analyses were conducted using parent-reported internalizing symptoms(PR-Int) and parent-reported externalizing symptoms (PR-Ext). A MANCOVA (with parent and child genders as covariates) was used to examine group differences on PR-Int and PR-Ext. The overall omnibus F was not significant ($F= 2.1$, $p=.14$) and follow-up univariate testing was also non-significant. An additional two-factor (group x attachment style) MANCOVA was conducted (with parent and child genders as covariates) to examine group and attachment style differences and any

interactions between group and attachment style on PR-Int and PR-Ext. The overall omnibus for group was significant after controlling for attachment style ($F=3.7$, $p<.05$). Follow-up univariate testing revealed no significant difference for parent reported internalizing symptoms ($F= .76$, $P=.39$), but there was a difference for parent reported externalizing symptoms ($F=4.37$, $P<.05$) where parents in the target group reported fewer externalizing symptoms ($M=-.20$, $SD=2.7$) than those in the comparison group ($M=.29$, $SD=2.95$). The interaction term was not-significant ($F=1.8$, $P=.10$).

Testing of attachment as a moderating variable. In addition to being a mediating variable, attachment security may function as a moderator affecting how parental cancer impacts adjustment. To test this hypothesis, separate GLM univariate analyses were run with cancer group, attachment style, and the group x attachment style interaction predicting SR-ESI, SR-CMal, SR-PAdj, SR-SAD. In order to be a moderator, the group x attachment style interaction needed to be significant. This was only true for the model predicting SR-SAD ($F (3,73)= 2.8$, $p<.05$). In this case, there was an interaction between cancer group and attachment style in the prediction of SR-SAD symptoms. This effect was primarily driven by differences between avoidant teens with and without a parent with cancer. Avoidantly attached teens in the comparison group reported higher SR-SAD symptoms ($M= .64$, $SD=.97$) than those in the cancer group ($M= -.76$, $SD=.41$). This suggests that for SR-SAD, avoidant attachment may serve as a moderating variable for how cancer group affects adjustment.

Combined Group Analyses

Attachment and coping. Several hypotheses were tested with the groups combined in order to validate the general model of how attachment, coping, and adjustment are related. Secure style was expected to be associated with high primary control (PCon) and secondary control (SCon), low effortful disengagement (EDis), medium involuntary engagement (IEng), and low involuntary disengagement (IDis). Ambivalent attachment would be associated with low primary and secondary control except for an expected high score on emotional expression, low effortful disengagement, high involuntary engagement, and low involuntary disengagement. Overall, it was expected that ambivalent adolescents will use all volitional coping styles less often than other coping styles. Avoidant attachment was anticipated to be particularly associated with higher involuntary engagement and disengagement, and effortful disengagement, and lower primary and secondary control. Fearful attachment was thought to be related to low voluntary engagement, and high involuntary disengagement and engagement. A MANCOVA was tested and was significant with RQ category (secure, avoidant, ambivalent, fearful) predicting the five types of stress responses ($F(3, 78)=6.5$, $p<.01$) while controlling for gender. Univariate analyses demonstrated significant attachment style differences on all stress responses. Mean values and significance are reported in Table 6. In addition, these patterns were similar for the comparison and cancer groups separately as depicted in Tables 7 and 8.

Attachment behaviors were also expected to be related to stress responses. It was anticipated that higher anxiety about proximity seeking, separation protest, feared loss,

availability, and use of the attachment figure would be related to low primary and secondary control, and high effortful disengagement. Zero-order correlations were conducted to examine the relationships between attachment behaviors and responses to stress. The following are also reported in Table 9. After controlling for sex and group, Primary Control Engagement coping was significantly negatively correlated with anxiety over the availability of the parent ($r = -.41$, $p<.01$), use of the parent ($r = -.57$, $p<.01$), feared loss of parent ($r = -.47$, $p<.01$), and protest at separation from parent ($r=-.24$, $P<.05$). Secondary Control Engagement Coping was also significantly negatively associated with anxiety over the availability of the parent ($r = -.36$, $p<.01$), use of the parent ($r = -.36$, $p<.01$), feared loss of parent ($r = -.43$, $p<.01$), and protest at separation from parent ($r=-.25$, $P<.05$) after controlling for sex and group. Primary Control Disengagement Coping was significantly and positively correlated with feared loss of parent ($r=.25$, $p<.05$), as well as concerns over availability of parent ($r=.25$, $p<.05$) and use of parent ($r=.39$, $p<.01$). Involuntary Engagement and Involuntary Disengagement were both significantly positively correlated with all attachment behaviors except proximity seeking: separation protest (for IE $r=.39$, $p <.01$; for ID $r=.25$, $p<.05$), feared loss (for IE $r =.60$, $p <.01$; for ID $r =.61$, $p<.01$), anxiety about availability (for IE $r=.27$, $p <.05$; for ID $r=.44$, $p<.01$), and concerns over use (for IE $r=.39$, $p <.01$; for ID $r=.50$, $p<.01$).

Attachment and adjustment. It was expected that securely attached individuals would report less distress and better adjustment on both parent and self report measures. Specifically, secure style was expected to be positively related to self-reported overall

personal adjustment (SR-PAdj), and negatively related to: self-reported emotional symptoms (SR-ESI), self-reported clinical maladjustment (SR-CMal), self-reported school maladjustment (SR-SMal), and self-reported social stress/anxiety/depression triad (SR-SAD), as well as parent-reported internalizing symptoms(PR-Int) and parent-reported externalizing symptoms (PR-Ext). Ambivalent style was expected to be positively related to SR-ESI, SR-CMal, SR-SAD, PR-Int, and negatively related to SR-PAdj Avoidant style was expected to be related to PR-Ext. Fearful was proposed to be positively related to SR-ESI, SR-CMal, SR-SMal, SR-SAD, PR-Int, PR-Ext, and negatively related to SR-PAdj.

To test the effects of attachment style on self- reported distress, a MANOVA was conducted with attachment style (secure, avoidant, ambivalent, fearful) predicting SR-ESI, SR-CMal, SR-SMal, and SR-SAD. This test was significant with an omnibus F (12,228)= 4.0, $p<.01$. Follow-up univariate testing revealed significant differences by attachment style for SR-ESI, SR-CMal, and SR-SAD but not SR-SMal. See Table 10 for means and standard deviations. Furthermore, these relationships were similar within each of the two groups despite the between group differences as depicted in Tables 11 and 12.

Similar analyses were conducted for parent reported distress. A MANOVA was tested with self-reported attachment style predicting parent-reported internalizing (PR-Int) and parent-reported externalizing (PR-Ext) symptoms. The omnibus F test was significant ($F(9,231) = 4.60$, $P <.01$). Follow-up univariate testing demonstrated significant attachment style differences for internalizing but not externalizing symptoms. See Table 13.

Separate univariate testing was done to examine the effects of attachment style on overall personal adjustment (SR-PAdj). ANCOVA (with gender as a covariate) was conducted with attachment style predicting SR-PAdj with a significant result ($F(3,77) = 3.95$, $P < .05$). A one-way ANOVA was significant for the effects of attachment style on overall personal adjustment ($F(3,77) = 3.95$, $p < .05$). Securely attached teens reported the highest overall adjustment followed by: avoidant, ambivalent, and fearful teens. See Table 14. Similar patterns were seen within both the comparison and cancer groups as shown in Tables 11 and 12.

Stress responses and adjustment. To test the relationship between stress responses and adjustment, a multivariate regression model was tested with self-reported proportional stress responses significantly predicting SR-CMal ($F(5,71) = 17.53$, $p < .01$), SR-SMal ($F(4,74) = 4.29$, $p < .01$), SR-ESI ($F(4,74) = 21.10$, $p < .01$), and SR-SAD triad ($F(4,74) = 20.36$, $p < .01$). Secondary control engagement coping was not related to any adjustment measures. In terms of SR-SMal, only gender (being male) and involuntary disengagement predicted higher rates of school maladjustment ($B = .475$, and $B = 4.19$, $p < .05$). However, SR-CMal, SR-ESI, and SR-SAD were significantly predicted by lower primary control coping, higher effortful disengagement, and higher involuntary engagement and disengagement (B ranging from 2.72-28.68, $p < .05$ for all effects). Overall personal adjustment was not significantly predicted by stress responses and/or gender.

Testing of the Complete Model. A Generalized Linear Model and follow-up testing was conducted to examine the main effects for the following independent

variables: attachment style (with four unique categories), overall coping (a composite of the three coping variables), and total stress responses (a composite of the 4 stress responses) as well as the interaction of these on the dependent variable, clinical maladjustment (SR-CMal). The overall model was significant with an omnibus significance of $p<.01$. All main effects were significant at $p<.01$, whilst none of the interaction terms were significant. For attachment style, highest clinical maladjustment was found for fearful style (M=33.67, SD=10.36), followed by ambivalent style (M=20.33, SD=6.62), avoidant (M=11.80, SD=6.20), and secure (M=10.29, SD=7.10) (B weights ranged from -4.3 to 32.76). In terms of stress responses and coping, clinical maladjustment was predicted by lower overall coping (B=-.69, $p<.05$), higher stress responses (B=.426, $p<.05$). These models were also tested separately for the comparison and cancer groups with both being significant with an omnibus significance $p<.01$.

Differences within the Cancer Group

To test for important variables in how teens deal with having a parent with cancer, analyses were conducted within the cancer group only. Some analyses were conducted with self-report only, while others used self and parent-report. In addition, because we are discussing adjustment to cancer, stress-responses in this section are generally specific to dealing with parental cancer. Adolescents in the target group also completed the social stress version of the RSQ, which was not used in these within-group analyses. However, adolescent's report of their coping with parental illness was highly correlated with their report of coping with social stress (r=.79).

Cancer stage. First, cancer stage was examined as a predictor for attachment, adjustment, and stress responses. Two separate MANOVAs were tested for the effects of cancer stage on: distress and personal adjustment (SR-ESI, SR-SAD, SR-CMal, SR-SMal, SR-PAdj); and the five stress responses. No significant differences were found on these variables for cancer stage ($F(12,114)=1.33$, $p=.21$ and $F(16,144)=.50$, $p=.97$). A chi-square analysis was conducted to examine the relationship between cancer stage and attachment style, which was also not significant X^2 (12, N=42)= 8.09, p=.78.

Adolescents' perceptions of parental illness. Adolescents reported on several aspects of parental cancer that dealt with the ways in which the experienced parental cancer. These included Likert-scale ratings of variables such as: perceived severity of parental illness, amount of information they were given about parental illness, and overall effects of parental illness on their lives. In addition, as part of the cancer-specific RSQ, they endorsed which cancer-related stressors they were facing from a list of 23 possible stressors (e.g. financial strain, increased responsibility, marital discord, fears of illness) and the degree to which these affected them. These variables were tested as predictors of attachment, stress responses, adjustment.

In terms of attachment, a univariate ANOVA testing attachment style and perceived seriousness of illness was not significant ($F(3,42)=.40$, $p=.78$). In contrast, an additional ANOVA indicated that the amount of information that the teen has been given about his/her parent's illness was significantly related to attachment style ($F(3,42) = 2.90$, $p<.05$). Teens with a secure attachment style reported the most knowledge (M= 3.79, SD= .43), followed by teens with an avoidant attachment style (M= 3.60, SD= .70),

fearful style (M= 2.92, SD= .99), and ambivalent style (M= 2.86, SD= 1.57). See Figure 7 for an illustration of this effect.

Multivariate regression model was tested using information received and perceived severity to predict RAQ attachment behaviors. This was not significant as attachment behaviors did not differ by knowledge or severity of illness ($F(15,90)=.61$, $P=.86$).

With regard to stress responses, zero-order correlations were examined for variables such as information, perceived severity, overall effects of cancer on life, number of cancer-related stressors, and degree of cancer-related stressors with the five stress response proportion scores. There were some significant relationships between cancer-related variables and stress responses. See Table 15 for correlations.

Similar analyses were run looking at cancer-related variables and self-reported adjustment. Teens' perceived severity of parental cancer, was related to SR-PAdj in an unexpected way ($r= .39$, $p<.01$). The more severe that a teen perceived his or her parent's cancer to be, the better his or her report of overall adjustment. There was also an surprising result for a variable that looked at how much parental cancer affected a teen's life, where "effect on life" was positively associated with both SR-CMal ($r=.34$, $p<.05$) and SR-SAD ($r=.35$, $p<.05$), as well as being positively associated with SR-PAdj ($r= .31$, $p<.05$). In this analysis, the more that cancer affected a teen's life, the higher their reports of clinical maladjustment and social stress/anxiety/depression symptoms, as well as the higher their reports of overall personal adjustment. Further, the higher the effects on life, the greater their parents report of internalizing problems ($r=.31$, $p<.05$). Amount

of information provided to the teen about cancer was also examined. It was found that the more information that a teen had about cancer, the higher his/her level of overall adjustment (SR-PAdj) ($r = .34$, $p < .05$) and lower his/her level of emotional symptoms (Sr-ESI) ($r=-.38$, $P<.01$) and SR-SAD ($r=-.40$, $p<.01$).

Data was also examined regarding the number and degree of cancer-related stressors such as: financial strain, marital conflict, hospital stays, etc. The degree and number of stressors from cancer related situations was positively correlated with SR-CMal, SR-ESI, and SR-SAD as well as parent-reported internalizing symptoms ($r=.31$, $p<.05$). However, neither number nor degree of cancer-related stressors were related to overall personal adjustment. See Table 16.

Parental well-being and adolescent attachment, stress responses, and adjustment. In addition to adolescent perceptions, there were several measures investigating parent-related variables that were expected to impact adolescent attachment, stress responses, and adjustment. For example, parents completed the BSI as a measure of their emotional health. ANOVA testing was done to examine the relationship between parental emotional health and adolescent attachment style. This was not significant ($F(3,38)=.14$, $p=.93$). Additionally, a multivariate regression was conducted to examine the relationship between BSI and the five stress responses, which was also not significant ($F(4,36)=.97$, $p=.44$). These results suggest no direct relationship between parent emotional adjustment and child attachment or stress responses in this study. In contrast, a multivariate regression model was significant for the relationship between BSI and PR-Int and PR-Ext ($F(2,83)=4.71$, $p<.05$). Parameter estimates suggest that as BSI increases so do PR-Ext

and PR-Int (B=.03, .03). This indicates that the more that parents are experiencing their own emotional distress, the more they report internalizing and externalizing problems in the teenagers. However, increased parental distress was not associated with SR-ESI, SR-CMal, SR-SMal, or SR-PAdj in teenagers (F range from .01 to.74, p ranged from .40 to .92).

Furthermore, parents with cancer completed the Psychosocial Adjustment to Illness Scale, which provides both a score for overall adjustment as well as for distress. ANOVA testing examining the relationships between attachment style and PAIS-distress and PAIS-total were not significant (F(3,39)=.13 and .11, p=.94 and .95). A MANOVA was tested with PAIS distress and total scores predicting the five stress responses. This result was not significant (F(4,36)=.39, p=.82) indicating no relationship between parent adjustment to illness and child stress responses. A 2-factor MANOVA (PAIS-distress and PAIS-total) was conducted to examine the effects of parental adjustment to illness on adolescent PR-Int and PR-Ext symptoms. The overall effects of PAIS-distress were significant (F(2,84)=5.87, p<.01), but the effects of PAIS-overall were not significant (F(2,84)=.68, p=.51). PAIS-distress positively predicted PR-Int and PR-Ext.

Testing of attachment as a mediating variable within the cancer group. Because we were unable to use SEM, the mediating effects of attachment security were tested using a series of linear regression models using attachment style (secure, avoidant, ambivalent, fearful), number of stressors, and the interaction predicting SR-ESI. Number of emotional symptoms was selected as the outcome variable based on prior research supporting this as in important indicator of adolescent mental health (Compas et

al., 2001; Steele et al., 1997). First, a linear regression model was fit for the cancer group using number of stressors to predict SR-ESI. This model was significant with increasing numbers of stressors being related to more symptoms (B=.44, p<.01). Next, the same model was tested with the addition of attachment style. The model was significant overall (p<.01), but with the addition of attachment style, number of stressors was no longer a significant predictor (p=.28). This indicates that attachment style fully mediates the relationship between number of stressors associated with having a parent with cancer and SR-ESI. In addition, Sobel testing was run with a Sobel value of 3.17 (p<.01). The percentage of the total effect of number of stressors on adjustment that is mediated by RQ is 61.27%. To support the causality hypothesis, the model was also tested with SR-ESI and attachment style predicting number of cancer-related stressors. This model was not significant (p=.16) with neither attachment style nor emotional symptoms predicting cancer-related stressors. See Figure 8.

CHAPTER IV

DISCUSSION

Interpretation and Implication of Results

With the ongoing development of the field of behavioral medicine, increasing attention has been given to the effects of medical illness on the entire family unit. Recent research suggests that adolescents who have a parent with cancer are at increased risk for a number of adjustment problems, such as anxiety, depression, acting out, and school difficulty (Steele, Forehand, & Armistead, 1997). However, research in this area has been largely atheoretical and does not include mechanisms of influence. The current study utilized the well-established framework of attachment theory to test a model that includes the relationships between parental cancer, adolescent attachment to parents, adolescent coping, and adolescent adjustment. In addition, further analyses were conducted both between and within groups to allow for a greater understanding of variables that affect adjustment to having a parent with cancer. Finally, relationships between attachment, coping, and adjustment in general were explored. Many of the expected hypotheses were confirmed with some additional unanticipated findings.

Attachment Differences between the Cancer and Comparison Groups

One of the primary aims of this study was to investigate the effects of parental cancer on attachment style and attachment behavior. While this has been a topic of research in spouses dealing with cancer, attachment theory has not been studied with

children of cancer patients (Koopman et al., 2000). It was expected that adolescents in the target group (those with a parent with cancer) would have lower rates of secure attachment, and higher rates of all three insecure attachment styles than adolescents in the comparison group. The findings support this hypothesis with approximately 60% of the comparison group reporting a secure attachment style compared to only 33% of the target group (population estimates for secure style are around 60%). In addition, target adolescents were more likely to be avoidantly and ambivalently attached than comparison teens, and more than three times as likely to be fearfully attached. However, on retrospective measures of past attachment security, there were no differences. This suggests that it is likely that having a parent diagnosed with cancer may lead to a more insecure attachment style, especially a change to a fearful attachment style. Longitudinal research would be needed to further test this hypothesis.

While not all attachment behaviors varied between groups, there were significant differences in feared loss of an attachment figure and anxiety about using attachment figure as a secure base. Adolescents who had a parent with cancer displayed higher feared loss and higher anxiety about use of the parent as a secure base than comparison adolescents. They did not differ on proximity seeking, separation protest, or concerns about availability. This may be due in part to the increased cognitive abilities of teenagers where actual availability and comfort seeking is less important than "felt security". This supports the prior findings by Kenny and Rice (1995) that place emphasis on symbolic support and internal working models as opposed to actual responsivity of the caregiver.

In addition, these findings highlight the importance of the secure base function and response to threatened loss in adolescence.

Differences in Responses to Stress between the Cancer and Comparison Groups

To investigate stress responses, teenagers' responses to the social stress version of the RSQ were contrasted. The hypotheses for group differences were only partially supported. Adolescents in the cancer group were less likely than the comparison group to use Primary Control coping such as: problem solving, emotional regulation, and emotional expression. However, they were more likely to use Secondary Control Coping (i.e. positive thinking, cognitive restructuring, and acceptance) than the comparison group. Adolescents' increase in Secondary Control Coping may reflect an increased focus on dealing with emotions created by problems that are unable to control as opposed to doing things to directly change one's situation. This seems likely to occur for those teens who perceive themselves to be ineffective in altering their environment, such as those dealing with parental cancer. There were no significant differences for Disengagement Coping or Involuntary Stress Responses to social stress.

Teens in the cancer group also completed the measure for cancer-related stress and those results were used for within cancer group analyses. There was a strong, although not perfect, correlation between stress-responses to these two separate stressors. Thus, it may be hypothesized that parental cancer and the related attachment changes may influence how an adolescent copes not only with the parent's illness, but also with other types of problems such as social stress. For example, having a parent with cancer may lead to a more insecure attachment style, which would then alter the adolescent's

internal working models and stress responses. Given the nature of attachment, this would likely impact many areas of functioning for the individual. Thus, the adolescent may be more likely to use ineffective coping strategies and have greater involuntary stress responses than a securely attached adolescent for many different types of stress.

Differences in Adjustment between the Cancer and Comparison Groups

With regard to adjustment, it was hypothesized that the target group would have higher levels of self and parent reported mental health problems. However, this hypothesis was not supported. In general, having a parent with cancer was not related to any self-reported emotional or behavioral symptoms. When attachment style was controlled for, group did become predictive of emotional symptoms, but in the opposite direction of what was predicted. In other words, if attachment was controlled for, adolescents with a parent with cancer reported lower emotional symptoms than those in the comparison group. This placed the comparison group slightly above average on age-based norms, while the cancer group was slightly below average. This further suggests that it is not cancer per se that affects adolescent adjustment, but rather the changes in the parent-child relationship and coping. This also provides some potentially encouraging news for families dealing with parental cancer. Adolescents may be able to experience little emotional difficulty if efforts are made to maintain and strengthen the parent-child attachment relationship during diagnosis and treatment of parental cancer. If this secure base is able to be maintained, the may in fact experience fewer symptoms than typical teenagers. Further, adolescents could be provided with training in use of effective coping strategies to attempt to prevent emotional difficulty.

Attachment as a Moderating Variable

It was proposed that attachment style may also serve as a moderator of the effect of parental cancer on adolescent adjustment. Attachment style was examined as a potential moderator for all adolescent adjustment variables (SR-ESI, SR-SMal, SR-CMal, SR-SAD, SR-PAdj). However, almost all of these interactions were non-significant with the exception of SR-SAD. For SR-SAD, it appeared that attachment style did serve as a moderator of the effects of parental cancer on social stress/anxiety/depression symptoms. This effect was largely driven by differences between the avoidantly attached teens in the cancer and comparison groups. Specifically, avoidant attachment style in the cancer group was related to lower reports of SAD symptoms compared to avoidant attachment style in the comparison group. This finding makes sense if we consider that stress tends to activate the attachment system and corresponding behaviors. In other words, when faced with the significant stress of parental cancer, avoidant teens may have a tendency to become more avoidant and deny symptoms when compared to their counterparts without this level of stress.

Validation of Relationships between Attachment, Stress Responses, and Adjustment

Attachment and stress responses. The associations between attachment and stress responses were tested within the entire adolescent group to examine the relationships between these variables regardless of parental illness. In general, hypotheses regarding attachment behaviors and stress responses were confirmed. Adolescents who had higher anxiety regarding the availability of their parent, concerns over the use of the parent as a secure base, feared loss of parent, and protest at being separated from the parent

displayed lower levels of Primary and Secondary Control Coping, and higher levels of Disengagement Coping, Involuntary Engagement, and Involuntary Disengagement. This indicates that adolescents with attachment-related anxieties and lack of a secure base were more likely to have negative stress responses and utilized Engagement coping strategies less often. They were more likely, however, to use Disengagement coping strategies to cope with stress.

In addition, attachment style predicted stress responses in the expected ways. Secure attachment style was associated with the highest levels of Primary and Secondary Control Coping, and lowest levels of Involuntary Engagement and Involuntary Disengagement. In contrast, individuals with an avoidant attachment style had the highest rates of Disengagement coping, individuals with an ambivalent attachment style had the highest rates of Involuntary Engagement, and fearfully attached adolescents had the highest rates of Involuntary Disengagement. These findings support the idea that attachment style and behaviors are closely tied to stress responses and coping strategies.(Bowlby, 1988; Simpson et al., 1992) In addition, these findings provide support for the use of attachment versus a general parent-child relationship variable, as specific predictions were supported for each attachment style. It is hypothesized that attachment relationships form an individual's internal working model for dealing with stressful situations, which is then applied to stressors unrelated to the attachment relationship. In other words, attachment style and behavior can successfully predict an individual's ability to cope with an outside stressor in specific ways.

Adjustment. As was predicted, adjustment was related to attachment and stress responses in specific ways. Secure style was associated with better adjustment by both child and parent report while ambivalent style was related to moderate-high maladjustment (particularly internalizing symptoms). Lastly, fearfully attached adolescents reported the highest levels of all types of maladjustment and parent reports indicated the highest level of internalizing symptoms. It was also found that maladjustment was predicted by lower primary control, higher disengagement coping, and higher involuntary engagement and disengagement. Thus, it appears likely that adjustment is closely related to how an individual deals with stress and his or her attachment relationships. This is an interesting finding given that coping was specific to a particular stressor, but still predicts overall adjustment. Thus, it seems likely that an individual's response to stress is probably similar across different stressors and may indeed reflect an internal working model or schema. This was further supported by the high correlation between target teens' report of coping with parental cancer and coping with social stress. This supports the idea that coping and stress responses may be rather stable across types of stress, but appear to be strongly influenced by attachment relationships.

Effects of Cancer Specific Variables within the Cancer Group

Stage and perceived severity. Given that a cancer diagnosis impacts an individual and family in many different ways, many variables may contribute to a family's adjustment to cancer. In addition, this study included individuals with all sites and stages of cancer, which means a great deal of diversity in terms of illness and treatment. Perhaps

one of the most obvious variables to consider in cancer diagnosis is stage. Thus, cancer stage was investigated as a potential influence on attachment, adjustment and coping in teens with a parent with cancer. Prior research in this area has supported that stage and an adolescent's perceived severity of parental illness are not generally related and that perceived severity is a better predictor of adjustment (Compas, Malcarne, & Fondacaro, 1988). Thus, perceived severity was also included as a measure of seriousness of illness. Based on prior research, it was expected that there would not be differences by stage, but that perceived seriousness of illness would be related to worse attachment, coping, and adjustment. As was expected, stage was not associated with attachment, coping, or adjustment suggesting that there are other aspects of cancer diagnosis that are more influential than actual physical health.

However, the findings for perceived severity were not as anticipated: perceptions of greater severity were related to higher coping and stress responses as well as better overall personal adjustment. Further, perceived severity of illness was not significantly related to either child or parent reported emotional or behavioral difficulties. This is in contrast with prior research, which has found perceptions of greater severity to be associated with more emotional and behavioral symptoms (Armistead et al., 1995; Compas et al., 1994; Grant & Compas, 1995; Patenaude, 2000).

There may be several possible explanations for this disparity. One possibility is that prior studies have not typically included an overall measure of adjustment, but have focused instead on measures of behavioral and emotional problems. This may have

limited the ability to assess overall functioning while overly focusing on clinical symptoms.

Overall impact of parental illness. In addition to perceived severity, adolescents rated the degree to which their parents' illness had impacted their life. This variable was examined in relation to coping and adjustment. The findings were somewhat unexpected given our original hypotheses, as ratings of greater influence on an individual's life were positively correlated with both clinical maladjustment and emotional symptoms as well as positively correlated with overall personal adjustment. In other words, adolescents who reported that their parent's cancer had a larger impact on their life also reported better overall personal adjustment and more emotional symptoms. These may seem contradictory. However, these scales measure different areas of functioning with personal adjustment being focused on self-competence and interpersonal effectiveness, while emotional symptoms scale taps into distress. This finding may make sense in light of a recent movement in the health psychology literature that focuses on posttraumatic growth.

This area of research examines the possible personal growth that may occur in the face of medical illness. This is typically termed "posttraumatic growth" or PTG, which means a positive change in an individual's prior level of functioning following a traumatic event (Tedeschi & Calhoun, 1996). This research has consistently found that many individuals report positive changes in their well-being following cancer diagnosis and/or treatment (Antoni & Carver, 2003; Austin, 2000; Bellizzi & Blank, 2006; Harvey, Barnett, & Rupe, 2006; Kinsigner et. al., 2006; Taylor, Lichtmand & Wood, 1984).

Thus, the search has begun to identify contextual, disease, and intraindividual factors that may predict who is most likely to experience PTG. Initial findings have suggested several possible variables that seem to related to more PTG, these include: greater perceived impact of illness on one's life, greater fear of death, utilization of active coping strategies, and greater social support (Bellizzi & Blank, 2006, Kinsinger et. al, 2006). In general, there is not a correlation between PTG and anxiety or depression (Cordova, Cunningham, Carlson, & Andrykowski, 2001).

While the majority of this research has been with adult cancer survivors and their spouses (Austin, 2000; Bellizzi, 2004; Boyers, 2001; Sears, Stanton & Danoff-Burg, 2003), there have been a few studies that address posttraumatic growth (PTG) in childhood and adolescent cancer survivors and their families (Barakat, Alderfer, & Kazak, 2006; Kazak, Stuber, baraket, & Meeske, 1996; Mazur, 2006). The research has supported that many young people report psychosocial benefits following a traumatic event (Miliam, Ritt-Olson, & Unger, 2004; Walsh, 2003). Aldwin and Sutton (1998) proposed a developmental model for post-traumatic growth (PTG) that suggested an important role of coping and self-concept.

Futher, Barakat et al. (2006) found that most adolescents experienced PTG, with greater growth being related to greater perceived severity of illness and increased fear of death, regardless of objective disease stage. Interestingly, PTG was also positively correlated with adolescent posttraumatic stress symptoms. In addition to adolescent changes, most parents of children with cancer also reported PTG (Baraket et al., 2006).

Similarly, in this study, it seems likely that adolescents faced with parental cancer were able to grow from this experience and to perceive their lives in a different perspective than comparison teens. While there was not a direct PTG measure included in this study, there were several other variables that were examined that support the hypothesis of PTG. For example, several comparison teens endorsed items regarding suicidality/wishing to be dead, whereas none of the target teens endorsed these items. Perhaps in the face of true mortality, some teenagers may be able to take a different perspective on daily problems and place higher value on life in general. In addition, perceived severity of cancer and greater impact of cancer were positively related to overall personal adjustment. Thus, we should consider the possibility that a major life stress, such as parental cancer, can both increase anxiety/depression as well as leading to improved personal adjustment

*Level of knowledge about parent's illness. A*dolescents also reported on several other aspects of having an ill parent including: the amount of information they had been given, how much the parent's illness had affected their lifestyle, number of stressors resulting from the illness (e.g. increased responsibility, financial concerns, marital conflict), and how stressful these situations were overall. Several interesting results were found regarding how these aspects of having an ill parent related to attachment, responses to stress, and adjustment. First, the findings indicated that the amount of information that a teen had been given about his or her parent's illness was related to his or her attachment style. Teens that had been told more information tended to be securely attached, followed by teens categorizing themselves as avoidant, fearful, and ambivalently attached. Also,

teens that had been given more information about parental cancer had lower levels of Involuntary Disengagement, fewer emotional symptoms (SR-ESI), and better overall adjustment (SR-PAdj). This suggests that having open communication about illness may serve to reduce anxiety and contribute to a better parent-child relationship which then leads to improved coping and adjustment.

The importance of sharing information with adolescent children is a particularly interesting finding given the difficulties that were encountered with recruitment (i.e., parents not having told their teens about their illness). Even within the individuals who volunteered to participate in the study, having been told less information about parental illness was associated with insecure attachment, poorer coping, and worse adjustment. Therefore, it can only be assumed that teens living with a parent with cancer who has not talked with them at all about diagnoses would fare even more poorly. Given that many of the parents who had not told their adolescents about their diagnosis were in active treatment, it seems likely that the teens would have some knowledge or hypotheses about their parents' health (perhaps anticipating a worse outcome than in reality). Thus, they are liable to believe that not only is their parent ill, but that it is not acceptable to talk about the illness or to seek support. They may also be likely to experience mistrust and parent-child conflict, resulting in insecure attachment style.

Number and Degree of Cancer-Related Stressors. Adolescents reported the number of stressors related to parental illness (e.g. increased responsibility, financial concerns, marital conflict), and how stressful these situations were overall. Number of stressors and degree of stress were significantly related to coping and stress responses.

Specifically, number and level of stressors were negatively related to Secondary Control Coping, and positively associated with Involuntary Engagement and Disengagement.

In addition, number of stressors was negatively correlated with Primary Control Coping. Consistent with this, both number and degree of stressors were positively associated with self-reported emotional symptoms (SR-ESI) and parent-reported internalizing symptoms (PR-Int). However, overall personal adjustment (SR-PAdj) was significantly correlated with degree of cancer-related stress, but not on number of stressors. Better personal adjustment was related to less perceived degree of cancer-related stress.

In conclusion, it seems to the case that adolescents who are greatly impacted by parental cancer, but who not experience overwhelming stress from cancer related situations may be able to experience positive personal growth from parental cancer. On the other hand, adolescents who feels that they are greatly affected by cancer-related stressors would be likely to have worse personal adjustment and more emotional symptoms. Therefore, providers and parents need to be cognizant of how their teenagers experience cancer-related stressors. They can then make efforts to reduce this burden, whether it be marital therapy to reduce conflict in the home, finding ways for teens to continue their activities, or discussing financial strain with teens in a way that provides them with reassurance.

Mediation within the Cancer Group

Originally, SEM was to be used to evaluate the pathways of influence for the relationships between parental cancer, attachment, stress responses, and coping within the

cancer group. However, the sample recruited was not large enough to support these types of analyses. Thus, portions of the larger model were analyzed using other methods such as multivariate regression and Sobel testing for relationships thought to be mediated. For example, as described earlier, initial analyses indicated that the number of cancer-related stressors was highly predictive of stress responses and maladjustment in adolescents. This finding is concordant with prior research, but in and of itself does not offer any information about mechanisms of influence. However, by applying attachment theory as a mediator of this effect, we were able to begin to explain this result, and elucidate the potential pathways through which cancer-related stress causes difficulty for teens. Specifically, Sobel testing for mediation indicated that 62% of the effects of cancer-related stressor were mediated by attachment style. In fact, adding attachment style to the regression model made the number of stressors no longer a significant predictor of emotional symptoms, thereby indicating full mediation. Consequently, our hypothesis that cancer-related stress affects adolescents via the parent-child relationship rather than having a direct impact on adjustment was supported. Given that this study was cross-sectional in nature, we cannot fully declare that these findings represent causality.

However, testing of this model in reverse (predicting number of stressors from emotional symptoms or attachment style) resulted in a non-significant finding, which supports our hypotheses about causality. Therefore, there is strong support for the idea that there is no direct relationship between parental cancer variables and adolescent adjustment. Rather, cancer-related stress affects adolescent adjustment via changes in the

parent-child relationship and subsequent alterations in coping strategies. Further testing, including longitudinal research, is needed to further validate this theory.

Strengths of the Current Study

There are several strengths to the current study and improvements over prior research. Perhaps the most important contribution of this study is that it is one of the first to investigate pathways of influence for the effects of parental cancer on the family. While, there has been research investigating coping and adjustment difficulties in teens dealing with parental cancer (Armistead et. al., 1995), the literature primarily includes studies that are atheoretical and focus on mean differences. Many even lack a comparison group. A few researchers have discussed possible mechanisms of influences in largely conceptual papers lacking a data component. Only Steele (1997) included data about mechanisms of influence into his research, where he found that parent-child relationship problems and disengagement coping were mediators of the effects of cancer on adolescent adjustment. This study represented a movement in the literature towards including pathways of influence, but was still largely atheoretical in nature.

The current study picked up where Steele left off and expanded greatly upon past research by applying the theoretical model of attachment to elucidate the pathways between parental cancer and adolescent adjustment and coping difficulties. Attachment theory considerably increased our ability to predict adjustment and stress responses in teens dealing with parental cancer. This supported our hypothesis that parent-child attachment mediates the relationship between parental cancer and adjustment problems in adolescents. Given that specific predictions were supported with regards to the specific

attachment styles, it seems clear that attachment theory adds more information than a general parent-child relationship strength. In addition, cancer status was not generally predictive of adjustment problems without attachment style. This may provide information to guide future research into risk and resiliency in families coping with parental illness as well as to inform treatment.

In addition to adding a theoretical framework, this study is one of the few that investigates parental illness from both a child and a parent point of view. Most prior research utilized only self-report of adolescents or self-report of parents. This study included both parent and child versions of several measures, which allowed for comparison and collateral report. In addition, it enabled us to examine cancer-related variables and relationship variables as they are perceived by each individual. In addition, self-report was gathered from both teens and parents on a wide range of functioning. We were able to use information from these different sources to obtain a more complete picture of family functioning. In addition, the study included a matched comparison group to allow for a better evaluation of adolescent adjustment and coping. We were able to look at variables within the cancer group, but also to have a measure of coping and adjustment for teens without this stressor. This allowed for comparisons to be made between groups as well as to enable us to observe the relationships between attachment, coping, and adjustment overall. Future research in this field should include comparison groups and collateral report.

Lastly, this study improved upon past research by including measures of both coping and stress responses rather than volitional coping alone. This allowed us to

investigate not only intentional coping strategies, but also involuntary reactions to stress. This approach provides a much more complete picture of the way that an individual responds to a stressful event than just intentional coping. The findings from this study supported that involuntary stress responses were strongly related with adjustment. Thus, in future studies it will be important to use a broad measure that includes both voluntary and involuntary stress responses.

Limitations of the Current Study and Potential Future Directions for Research

There were several limitations to this study that impacted the conclusions that could be drawn. The first limitation of this study was that it was cross-sectional in nature. Thus, although we can test for mediation and make inferences about directionality of the effects, causality cannot be determined. This study did incorporate a matched comparison to try to account for prior attachment security. Longitudinal research needs to be done to further investigate directionality. However, this would likely be a difficult task, as families would need to be assessed prior to a parent being diagnosed with cancer in order to examine attachment changes. This would require that large groups of families would need to be assessed over several years. It is conceivable that studies could be conducted in families known to be at high-risk for cancer to increase the likelihood in the sample. However, it may be that attachment would be different in families known to be at high-risk if they had experienced many losses in their extended family. It would also be helpful to investigate the relationship of attachment and stress responses in a developmental way using longitudinal research. It is possible, though not anticipated, that adolescents may have been reporting transient changes in attachment. Over time,

especially as the threat of death passes, adolescents may return to a more secure attachment style. It is predicted that even after the crisis phase of illness that there would likely be long-term changes in attachment. Longitudinal work would need to be done to investigate this issue.

Furthermore, while only cancer patients were included in the current study, it seems likely that individuals faced with other chronic or serious illnesses would face similar issues. It is not cancer per se that affects the family, but the presence of illness. Other types of medical illness may affect the family differently based on characteristics of the particular illness such as: risk of death, amount of treatment required, typical age of onset, social stigma, and course of illness. Thus, this study may inform the larger health psychology field and similar models should be tested for other types of medical illness.

An additional limitation of the study was that only the ill parent and adolescent were able to participate. Given that they are only part of the family unit, there were many variables that were not included. Future research could incorporate the entire family unit and examine the role of attachment to the non-ill parent and the marital relationship. There are also likely to be additional variables that may influence adjustment to illness that were not able to be addressed in this study. One such example that has received some attention in the literature is spirituality. Spirituality may affect how a family deals with cancer in many different ways. This would be a worthwhile addition to future research.

A final consideration for this study is whether the results of this study are generalizable to the larger population of families dealing with parental cancer. As

mentioned earlier, it was very difficult to recruit participants for the current study. There seemed to be several reasons for this difficulty (e.g. some parents had not told their adolescent children that they had cancer and were not eligible for this study, others did not want to upset their children by having them complete the questionnaires, they were too busy, etc.). Thus, those individuals that decided to participate may not be representative of the larger population.

It is likely that individuals that chose to participate in the study were already more concerned about the effects of cancer on their children and had more open dialogue about their diagnosis. This self-selection bias may make individuals in the study different from a typical cancer patient. Given the results of this study, particularly as they pertain to the sharing of cancer-related knowledge, it is likely that the participating families were functioning better than the average family. Steps need to be taken to involve more families in research and provide parents with information about how to discuss cancer with their teenagers.

Along the same lines, our comparison group may not have been representative of the population. Some families were ineligible for the comparison group due to health problems in the parents (not cancer). In addition, the parents in the sample were also almost all married, which is not likely to be representative of the population as a whole. In this study, however, this may have been an advantage as it made the groups more matched.

Finally, as these teens were referred by the cancer group, and were generally similar to their counterparts, they would be biased in the same ways as the cancer group (level of functioning). Difficulty was faced in obtaining this sample as many families in the cancer group had not told family friends about the diagnosis, and did not want to refer anyone to the study. The implications of this secrecy for social support would be an interesting topic of research. Furthermore, future research could help to replicate this study perhaps using a different recruitment method, and increase generalizability. Larger studies would also allow for a model to be tested using SEM.

In summary, this study had some limitations mostly related to selection bias of the sample. The generalizability may be limited and future studies are needed to broaden the sample. In addition, the study was cross-sectional in nature and therefore causality cannot be fully determined.

Despite these limitations, the current study greatly advances the prior research in this area. The findings support attachment as an important mediating variable for how parental cancer affects adolescents. Adding attachment theory and using a comparison group increased our ability to predict stress responses and adjustment. Future research should include these aspects as well as trying to recruit a larger and more representative sample.

Clinical Implications of this Study for Families Dealing with Cancer

There were several important findings of the current study that may inform health professionals working with families dealing with parental cancer. First, the results of this study suggest that it is not cancer per se that directly affects adolescent adjustment, but rather, the effects of cancer on the parent-child relationship. Ideally, clinicians could apply this information about attachment, coping, and adjustment to help parents with cancer to meet the needs of their children. For example, if a parent is terminally ill, a child's insecure attachment to the parent may be adaptive in the long-term but may cause immediate difficulties. Thus, intervention may occur at the level of coping skill development or establishment of alternative attachment relationships. This would need to be applied on a family by family basis in order to not undermine the child's ability to cope with impending loss (Christ et. al., 1994; Saldinger, 2004).

However, if a parent is not terminally ill, a clinician may work with the family to insure that the child's needs are met and the parent is somewhat available to increase security. Given the findings of this study, this would likely include improvements in communication, altering the ways in which the parent can be available, and reducing fears of loss and use of parent as a secure base. For adolescents this would primarily focus on "felt security" and may include more discussions about attachment behaviors and relationships and maintenance of past family rituals.

Adolescents should also be encouraged to continue in their daily activities and social outings, and learn to rely on the parent as a secure base. In addition, all efforts should be made to reduce the strain placed on adolescents by cancer-related stressors

(financial, marital discord, increased responsibility). This will include provision of support for the parents, because if parents feel overwhelmed it will be much more difficult for them to attend to their children's needs. Intervention at the family level or individual therapy should be provided as often as needed.

Another important variable that was identified in this study was amount of information shared with adolescents about parental cancer. In the current study, results supported that the more information that an adolescent was provided, the better their adjustment and fewer their emotional symptoms. In addition, adolescents who were given a lot of information about their parent's illnesses tended to be securely attached and use better coping strategies with fewer involuntary stress responses. This suggests that open communication about cancer with teenagers is essential to their well-being. This is a particularly relevant finding given the difficulties that were had in recruitment due to teens being unaware of their parent's cancer diagnosis.

As care providers, it is of utmost importance to talk with cancer patients about the need to discuss their cancer diagnosis and treatment with their children. It would also be helpful for health providers to receive some training that would enable them to feel comfortable discussing this issue with their patients and to be able to offer guidance to patients on how and what to discuss with their children. Recently, the National Cancer Institute has realized that this is a large issue for cancer patients and has taken several initiatives to promote knowledge and understanding about how to communicate with one's family about cancer diagnosis and treatment.

This study also had some unexpected results that may suggest a more positive effect of parental cancer. Specifically, perceived severity of illness and degree to which cancer has affected an adolescent's life were related to better overall personal adjustment, as long as number of stressors was not too high. This was not an anticipated finding, but it is in line with recent research in the adult literature which has focused on resiliency and positive growth from cancer treatment and diagnosis. This is an encouraging finding, as it indicates that under certain circumstances, teenagers who have a parent with cancer may experience personal growth and change from the experience. They may develop a sense of perspective or find a new value in life that they did not previously have. Thus, if practitioners can focus their attention on improving communication, strengthening the parent-child attachment relationship, and helping a family identify when an adolescent is experiencing too many stressors, an adolescent may be able to experience personal growth from parental cancer.

In summary, the findings from this study indicate that cancer may not directly affect adjustment in adolescents, but that the subsequent changes in the parent-child relationship are detrimental to adolescent functioning. Thus, interventions directed toward attachment relationships and coping would likely be successful. In addition, the importance of providing information about cancer to adolescents is critical to adjustment and coping. This is an area that needs to receive more attention, with a focus on training practitioners to discuss this issue with their patients.

Lastly, there were some unexpected findings in this study which suggest the possibility of personal growth from parental illness. This may provide some peace of

mind to individuals being treated for cancer and their families. If families can maintain attachment roles and moderate stressors, there may a possibility for personal growth.

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Appendix A. TABLES AND FIGURES

Table 1
Parent Participant Demographic Information

	Cancer Parents (N=44)	**Comparison Parents (N=37)**	**Total (N=81)**
Age in years: Mean (SD)	46.15 (5.5)*	42.50 (5.9)*	44.46 (5.9)
# Male/# Female	9/35	7/29	16/64
% Caucasian	88.6%	86.1%	86.4%
% Hispanic	9.1%	8.1%	8.8%
% African American	2.3%	5.4%	3.8%
% Married	79.5%	91.5%	85.2%
% Divorced or Separated	13.7%	8.1%	11.1%
Mean Income	$40-65,000	$60-75,000	$60,000

* P<.05

Table 2
Adolescent Participant Demographic Information

	Cancer Adolescents (N=43)	**Comparison Adolescents (N=37)**	**Total (N=80)**
Age in years: Mean (SD)	15.31 (1.7)	15.60 (1.6)	15.47(1.6)
# 12 year olds	3	5	8
# 13 year olds	6	4	10
# 14 year olds	10	4	14
# 15 year olds	6	7	13
# 16 year olds	8	8	16
# 17 year olds	8	7	15
# 18 year olds	2	2	4
# Male/# Female	21/23	15/21	16/64
% Caucasian	81.2%	78.1%	80.7%
% Hispanic	9.3%	5.1%	7.1%
% African American	2.3%	5.4%	3.8%
% reporting excellent health	51.2%	43.6%	47.6%
%reporting very good health	30.2%	46.2%	37.8%
% reporting poor to fair health	18.7%	10.3%	14.6%
GPA: Mean (SD)	3.54 (.70)	3.52 (.63)	3.53 (.66)

* P<.05

Table 3
Means (SD) and Reliability for Continuous Measures by Group

	Cancer Adolescents (N=43)	**Comparison Adolescents (N=37)**	**Total (N=80)**	**Reliability (Cronbach's Alpha)**
RAQ- Sep. Protest	6.07 (.41)	6.02 (.42)	6.04(2.51)	.73
RAQ- Fear Loss	5.37 (.40)	4.50 (.35)	4.98 (2.32)	.73
RAQ-Proximity Seek	6.63 (.47)	6.86 (.48)	6.74 (2.84)	.82
RAQ- Availability	6.73 (.46)	5.75 (.37)	6.31 (2.61)	.80
RAQ- Use	7.37 (.38)	6.30 (.38)	6.93 (2.41)	.85
Primary Control Engagement	.22 (.02)	.27 (.02)	.24 (.02)	.85
Secondary Control Engagement	.35 (.02)	.30 (.02)	.33 (.02)	.74
Disengagement Coping.	.15 (.01)	.15 (.01)	.15 (.01)	.80
Involuntary Engagement	.19 (.02)	.18 (.02)	.19 (.02)	.91
Involuntary Disengagement	.09 (.01)	.10 (.01)	.09 (.01)	.88
SR-ESI	1.80 (.53)	2.13 (.63)	1.99 (3.51)	.93
SR-CMal	18.85 (1.98)	20.67 (2.35)	19.37(13.10)	
SR-SMal	13.24 (.59)	13.28 (.69)	13.04 (4.00)	
SR-SAD	11.95 (1.49)	13.12 (1.67)	12.54 (9.67)	
SR-PAdj	26.58 (.62)	26.04 (.54)	25.95 (4.28)	
PR-Ext	48.16 (7.61)	49.05 (9.92)	47.56 (8.65)	.86
PR-Int	48.81 (8.12)	46.11 (9.12)	48.57 (8.71)	
BSI	23.14 (3.11)	18.44 (2.99)	20.84(19.00)	.88

[a] Please note that higher scores on the RAQ mean more *anxiety* about that aspect of attachment. For example, higher availability means more anxiety about the availability of the attachment figure. [b] Responses to stress means are given for proportionate scores as they are generally used in the analyses instead of raw scores.
[c] Please note the following:

SR-ESI= self-reported emotional symptoms
SR-CMal= self-reported clinical maladjustment
SR-SMal= self-reported school maladjustment
SR-SAD= self-reported social stress/anxiety/depression triad
PR-Ext= parent-reported externalizing disorders
PR-Int= parent-reported internalizing disorders

Table 4
Coping Ratio Scores by Group

	Primary Control Engagement	**Secondary Control Engagement**	**Disengagement Coping**
Cancer Teens N=43	.32 (.13)*	.47(.11)*	.21 (.11)
Comparison Teens N=37	.38(.11)*	.40(.09)*	.22 (.11)

Values are given as Mean (SD)
* $p<.05$

Table 5
Correlations of self and parent-reported adolescent adjustment on BASC by group

	PR-Ext	**PR-Int**
SR-ESI	.33**	.42**
SR-CMal	.35**	.56**
SR-SMal	.28*	.02
SR-SAD	.24**	.38**
SR-PAdj	-.27*	-.17

[a] Please note the following:

SR-ESI= self-reported emotional symptoms
SR-CMal= self-reported clinical maladjustment
SR-SMal= self-reported school maladjustment
SR-SAD= self-reported social stress/anxiety/depression triad
PR-Ext= parent-reported externalizing disorders
PR-Int= parent-reported internalizing disorders

* p<.05; **p<.01

Table 6
MANCOVA results of the effects of RQ category on RSQ coping/stress responses proportional scores

	Secure (N=36)	**Avoidant (N=16)**	**Ambivalent (N=12)**	**Fearful (N=15)**	**F**	**p**
Primary Control Engagement	.30 (.09)	.20 (.09)	.25 (.12)	.18 (.10)	6.55	.00**
Secondary Control Engagement	.35 (.10)	.34 (.11)	.30 (.20)	.25 (.09)	2.81	.05*
Disengagement Coping.	.13 (.06)	.20 (.11)	.12 (.06)	.16 (.05)	4.05	.01**
Involuntary Engagement	.15 (.09)	.17 (.08)	.23 (.10)	.19 (.09)	5.06	.00**
Involuntary Disengagement	.07 (.06)	.09 (.08)	.10 (.06)	.16 (.07)	6.76	.00**

[a] Values are given as Mean (SD)
[b] Please note that higher scores on the RAQ mean more *anxiety* about that aspect of attachment. For example, higher availability means more anxiety about the availability of the attachment figure.
*p<.05, **p<.01

Table 7
MANCOVA results of the effects of RQ category on RSQ coping/stress responses proportional scores for Comparison Group only

	Emotional Symptoms	Personal Adjustment	Clinical Maladjustment
Secure	.64 (2.75)	27.57 (2.72)	14.78 (10.58)
Avoidant	4.44 (4.06)	25.29 (5.06)	28.14 (13.63)
Ambivalent	4.58 (4.26)	25.00 (4.12)	29.80 (13.48)
Fearful	5.01 (4.97)	23.67 (5.68)	32.33 (18.50)

Table 8
MANCOVA results of the effects of RQ category on RSQ coping/stress responses proportional scores for Cancer Group only

	Emotional Symptoms	Personal Adjustment	Clinical Maladjustment
Secure	-.58 (1.76)	27.50 (2.24)	10.29 (7.10)
Avoidant	.22 (2.73)	26.10 (3.07)	11.80 (6.19)
Ambivalent	2.55 (2.48)	25.29 (4.79)	19.42 (6.51)
Fearful	5.44 (2.20)	24.42 (3.80)	33.67 (10.37)

Table 9
Correlations between attachment behaviors and stress responses after controlling for gender and group

	Primary Control Coping	**Secondary Control Coping**	**Disengagement Coping**	**Involuntary Engagement**	**Involuntary Disengagement**
RAQ- Separation Protest	-.24*	-.25*	.05	.35**	.24*
RAQ- Feared Loss	-.47**	-.43**	.24*	.48**	.51**
RAQ- Proximity Seeking	.11	-.02	-.18	.12	-.12
RAQ- Availability	-.41**	-.37**	.25*	.33**	.52**
RAQ- Use	-.57**	-.36**	.38**	.38**	.54**

[a] Please note that higher scores on the RAQ mean more *anxiety* about that aspect of attachment. For example, higher availability means more anxiety about the availability of the attachment figure.
*p<.05, **p<.01

Table 10
Self-reported adjustment by attachment style

	Secure (37)	**Avoidant (17)**	**Ambivalent (12)**	**Fearful (15)**	**F**	**p**
SR-CMal	-.53 (.68)	-.06 (.96)	.30 (.85)	1.1 (.88)	11.32	.00*
SR-SMal	-.20 (.80)	.46 (1.01)	.12 (1.36)	.04 (.93)	1.91	.14
SR-ESI	.04 (2.4)	1.96 (3.86)	3.56 (3.43)	5.36 (2.71)	12.15	.00*
SR-SAD	-.52 (.72)	-.18 (.97)	.29 (.84)	1.12 (.76)	12.71	.00*

[a] Please note the following:

SR-ESI= self-reported emotional symptoms
SR-CMal= self-reported clinical maladjustment
SR-SMal= self-reported school maladjustment
SR-SAD= self-reported social stress/anxiety/depression triad

[b] Values are given as mean (SD)

* $p<.01$

Table 11
Responses to Stress by Attachment for Comparison Group

	Secure	**Avoidant**	**Ambivalent**	**Fearful**
Primary Control Engagement	.29 (.11)	.20 (.07)	.27 (.14)	.25 (.14)
Secondary Control Engagement	.33 (.11)	.25 (.05)	.24 (.10)	.20 (.09)
Disengagement Coping.	.13 (.07)	.20 (.04)	.17 (.03)	.14 (.07)
Involuntary Engagement	.16 (.09)	.21 (.06)	.22 (.08)	.25 (.10)
Involuntary Disengagement	.08 (.06)	.14 (.09)	.10 (.07)	.16 (.06)

Table 12
Responses to Stress by Attachment for Cancer Group

	Secure	**Avoidant**	**Ambivalent**	**Fearful**
Primary Control Engagement	.32 (.07)	.20 (.11)	.22 (.11)	.16 (.08)
Secondary Control Engagement	.39 (.08)	.40 (.10)	.32 (.25)	.26 (.09)
Disengagement Coping.	.12 (.06)	.19 (.13)	.11 (.07)	.17 (.04)
Involuntary Engagement	.13 (.08)	.15 (.09)	.25 (.11)	.25 (.11)
Involuntary Disengagement	.04 (.04)	.07 (.06)	.10 (.07)	.16 (.06)

Table 13
Parent-reported adjustment by attachment style

	Secure (37)	**Avoidant (17)**	**Ambivalent (12)**	**Fearful (15)**	**F**	**p**
PR Internalizing	-.54 (2.23)	-.97 (2.38)	1.33 (2.49)	1.60 (1.83)	5.58	.00*
PR Externalizing	-.12 (2.24)	-.56 (2.25)	.23 (2.68)	.79 (2.92)	.78	.51

Values are given as mean (SD)
* p<.01

Table 14
Self-reported Personal Adjustment by attachment style

	Secure (37)	**Avoidant (17)**	**Ambivalent (12)**	**Fearful (15)**	**F**	**p**
SR-PAdj	.40 (.56)	-.04 (.91)	-.24 (.94)	-.39 (.94)	3.95	<.05

Values are given as mean (SD)

Table 15
Correlations between cancer variables and stress responses

	Primary Control Coping	**Secondary Control Coping**	**Disengagement Coping**	**Involuntary Engagement**	**Involuntary Disengagement**
Information	.21	.25	-.25	-.16	-.40**
Perceived Seriousness	-.14	-.27	.22	.35*	.08
Effects on Life	.17	-.65**	-.01	.63**	.30
Number of stressors	-.28*	-.62**	.18	.76**	.46*
Degree of Stress	-.10	-.57**	.23	.63**	.46**

*p<.05, **p<.01

Table 16
Correlations between parental cancer variables and teen adjustment

	SR-ESI	SR-CMal	SR-SMal	SR-SAD	SR-PAdj	PR-INT	PR-EXT
Information	-.51**	-.26	-.12	-.40**	.46**	-.10	-.01
Perceived Seriousness	-.13	.13	-.17	.09	.40**	.08	-.06
Effects on Life	.23	.34*	.12	.35*	.31*	.31*	.02
Number of stressors	.55**	.66**	.23	.67**	-.16	.31*	-.04
Degree of Stress	.37*	.48**	.10	.49**	-.14	.31*	.05

[a] Please note the following:

SR-ESI= self-reported emotional symptoms
SR-CMal= self-reported clinical maladjustment
SR-SMal= self-reported school maladjustment
SR-SAD= self-reported social stress/anxiety/depression triad
PR-Ext= parent-reported externalizing disorders
PR-Int= parent-reported internalizing disorders

*p<.05; **p<.01

Figure 1
The Context of Parental Cancer

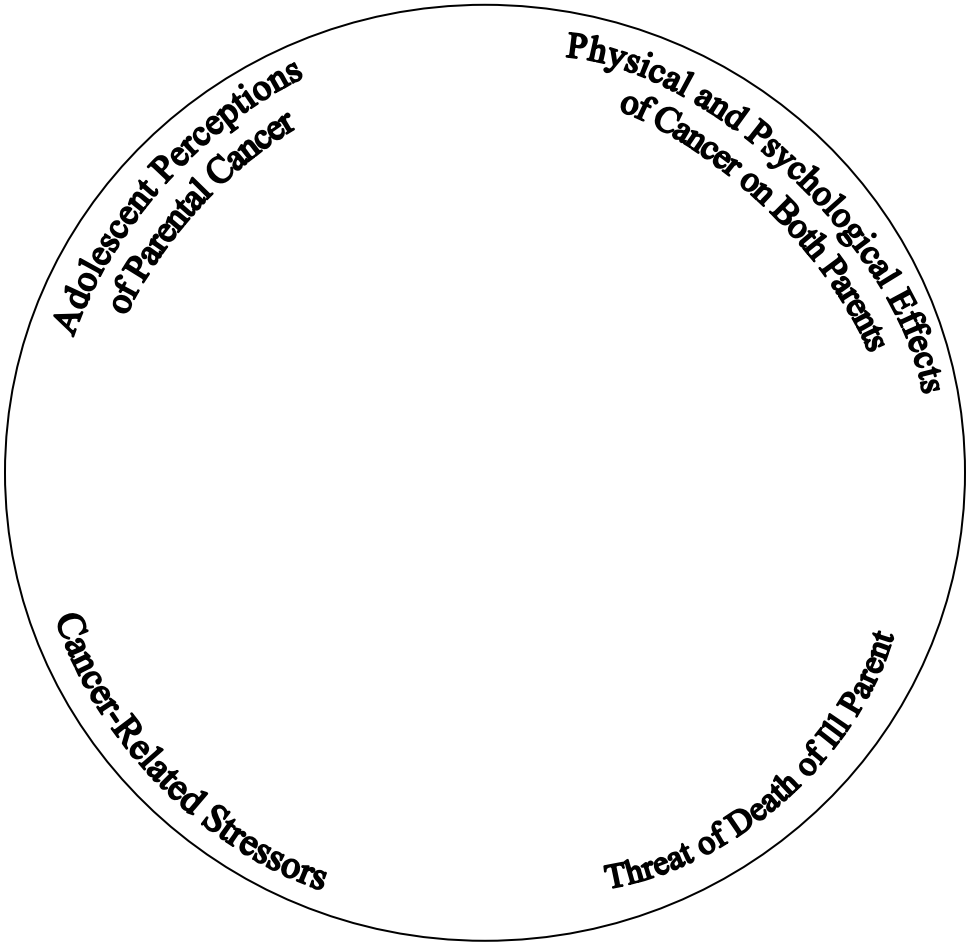


Figure 2
Attachment in the context of parental cancer

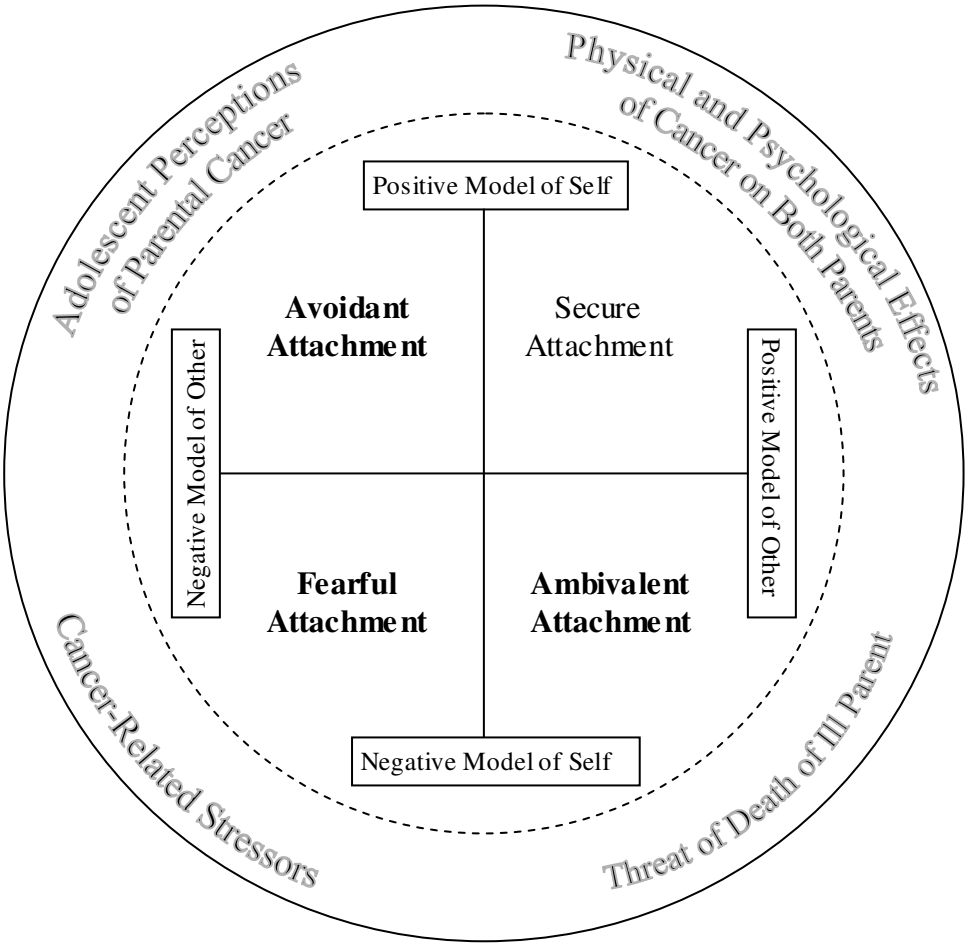


Figure 3
Stress responses in the context of parental cancer

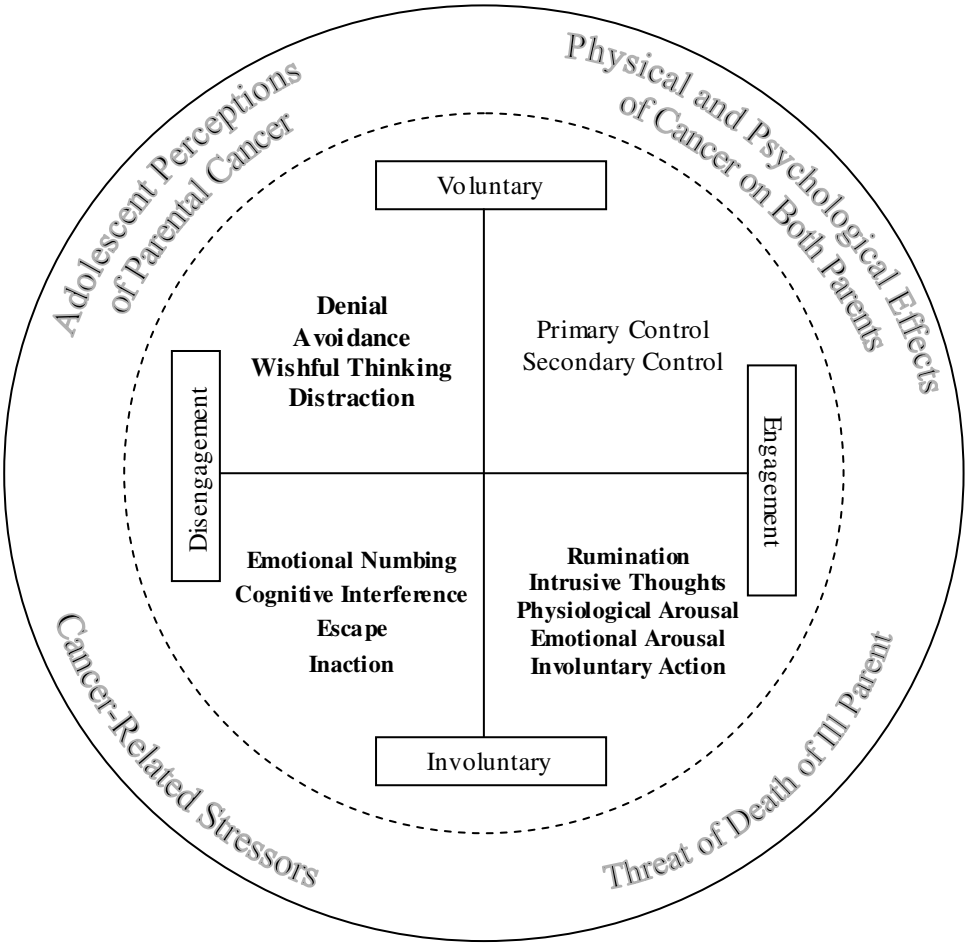


Figure 4
Stress responses and adjustment in the context of parental cancer

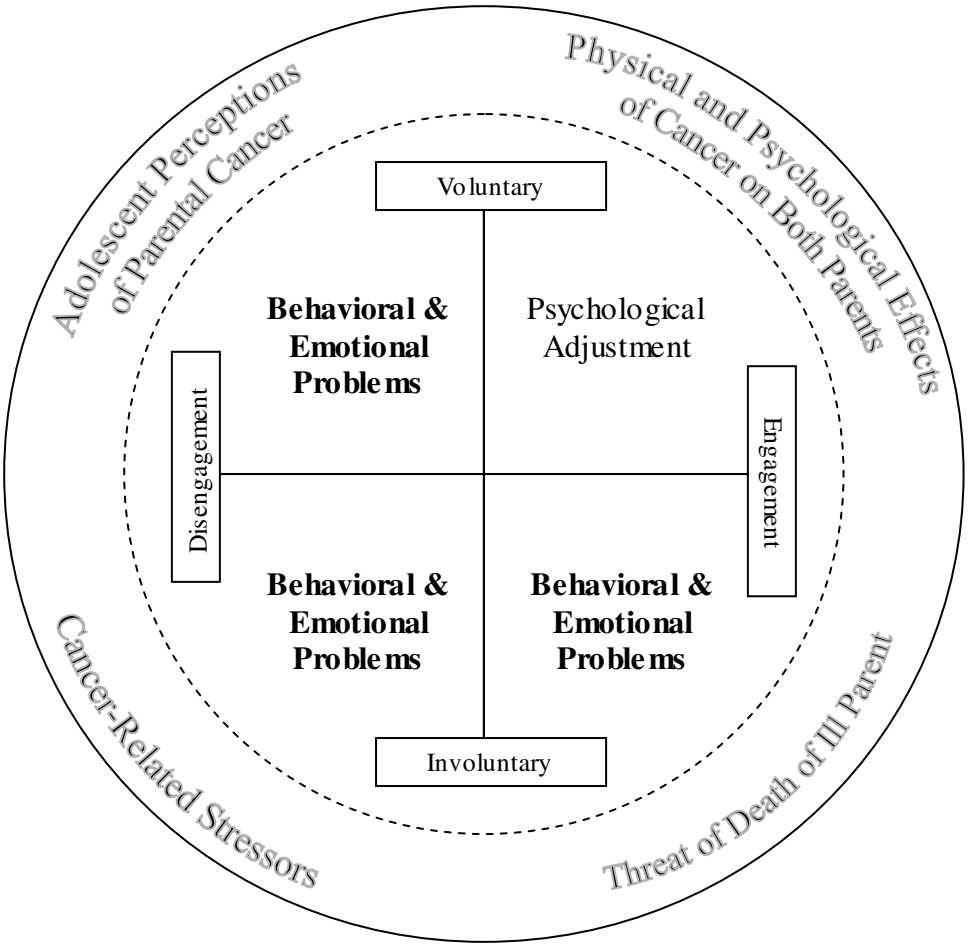


Figure 5
Attachment, stress responses, and adjustment in the context of parental cancer

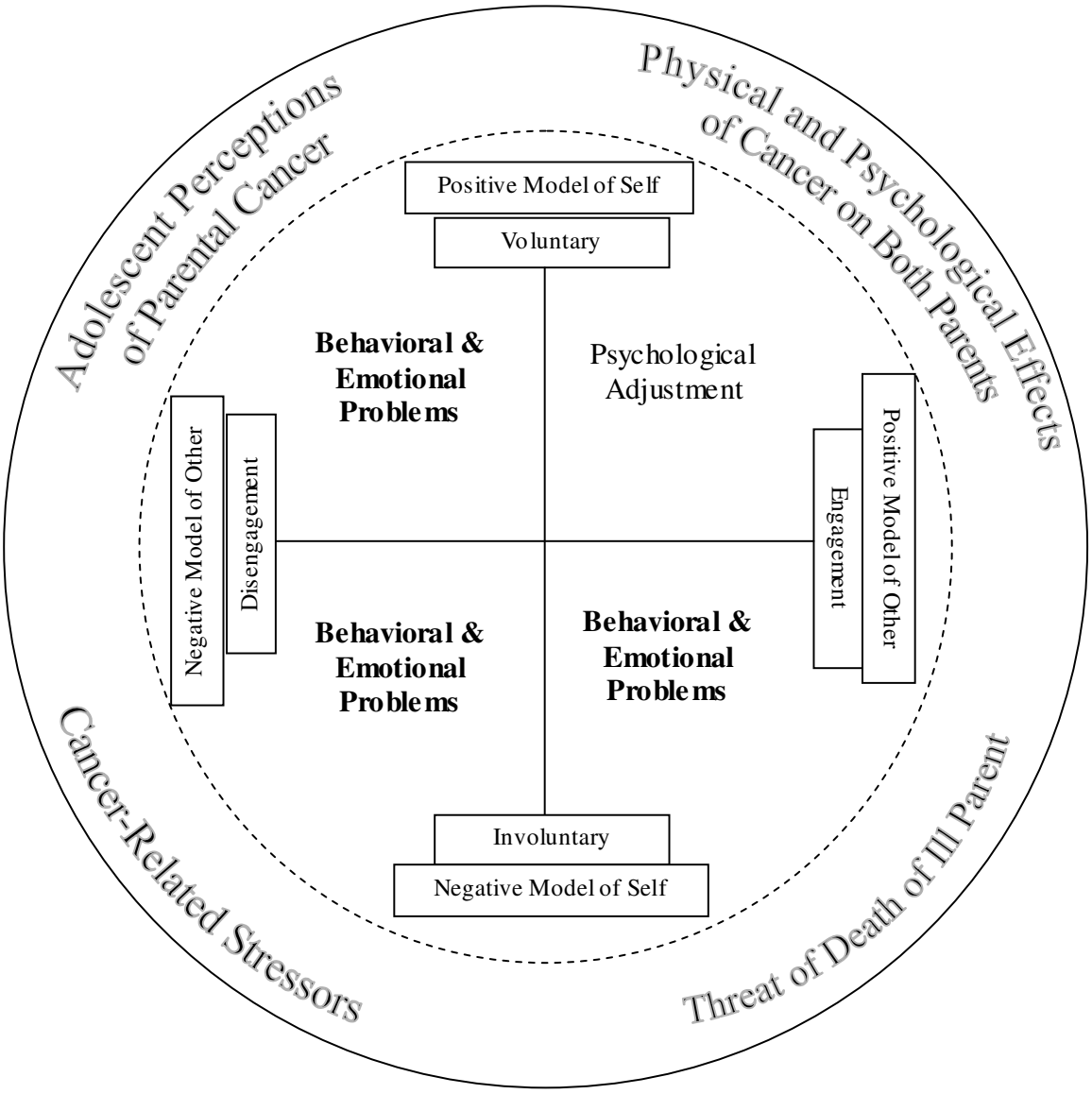


Figure 6
Attachment style by group

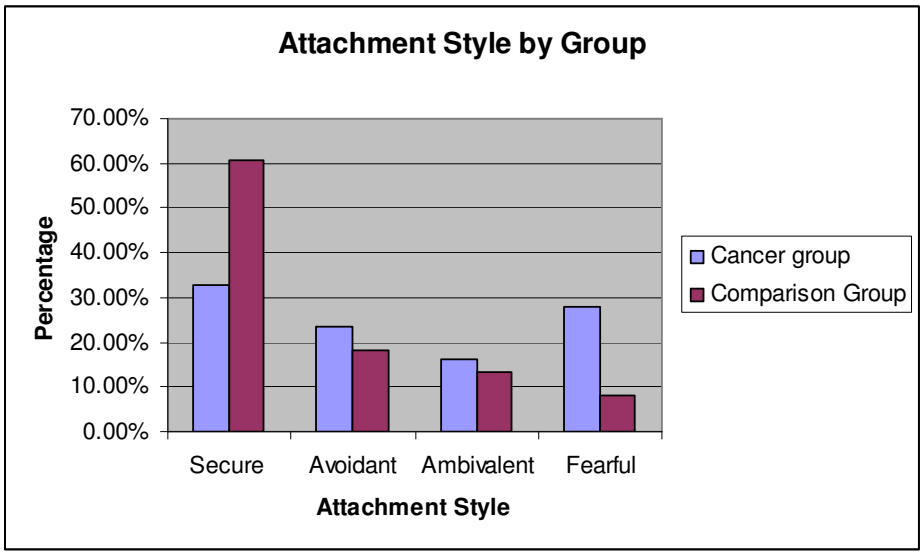


Figure 7
Attachment Style Differences in Information and Severity Perception

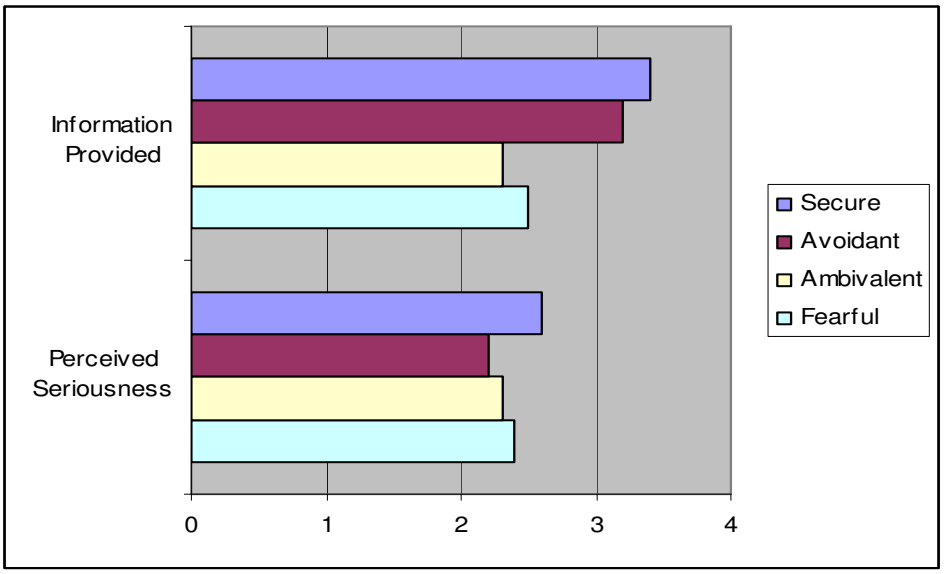
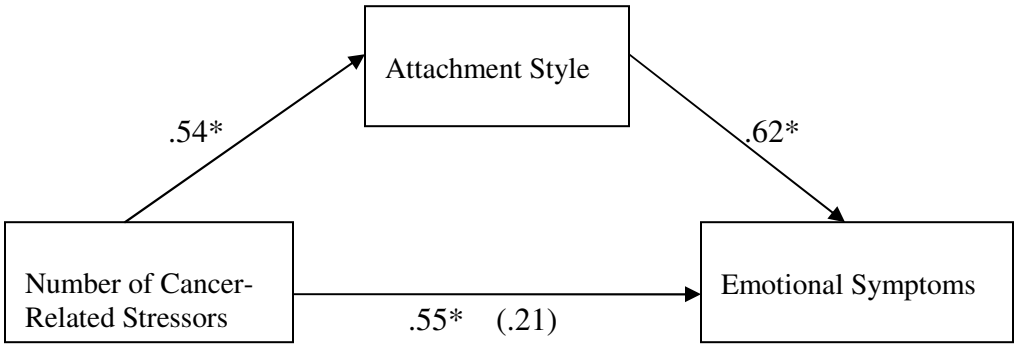


Figure 8
Standardized Regression Coefficients for the Relationship Between Number of Cancer-Related Stressors and Emotional Symptoms as Mediated by Attachment Style



The standardized regression coefficient between number of stressors and emotional symptoms after controlling for attachment style is in parentheses. * p<.05

Appendix B. EXAMPLES OF STRESS RESPONSES

Voluntary stress responses (coping) subtypes and examples

	Type of Response	Sample Item
Engagement	Primary Control:	
	Problem Solving	I try to think of different ways to change the problem or fix the situation.
	Emotional Regulation	I keep my feelings under control when I have to, then let them out when they won't make things worse.
	Emotional Expression	I let someone or something know how I feel.
	Secondary Control:	
	Positive Thinking	I tell myself that everything will be alright.
	Cognitive Restructuring	I think about the things that I am learning from the situation, or that something good will come from it.
	Acceptance	I realize that I just have to live with things the way they are.
Disengagement	*Avoidance*	I try to stay away from people and things that make me feel upset or remind me of the problem.
	Denial	I say to myself, "this isn't real."
	Wishful Thinking	I deal with the problem by wishing it would just go away, and everything would work itself out.
	Distraction	I imagine something fun or exciting happening in my life.

Involuntary Stress Responses

	Type of Response	Sample Item
Engagement	*Rumination*	I can't stop thinking about what I said or did.
	Intrusive Thoughts	Thoughts about these problems just pop into my head.
	Physiological Arousal	I feel sick to my stomach or get headaches.
	Emotional Arousal	I get upset by things that don't usually bother me.
	Involuntary Action	Sometimes I act without thinking.
Disengagement	*Emotional Numbing*	I don't feel anything at all, like I have no feelings.
	Cognitive Interference	My mind goes blank, I can't think at all.
	Inaction	I end up just lying around or sleeping a lot.
	Escape	I just have to get away, I can't stop myself.

Appendix C. SUMMARY OF RESULTS

I. Between Group Analyses

A. Attachment

1. Adolescents in the cancer group are less likely to be securely attached and more likely to have avoidant, ambivalent, and fearful attachment styles than the comparison group. No differences on past RQ.
2. The cancer group had higher anxiety about loss of the caregiver and more concerns over using the caregiver as a secure base.

B. Stress Responses to social stress

1. The cancer group had higher ratio rates of secondary control coping and lower primary control coping than the comparison group.
2. No univariate differences on Effortful disengagement, Involuntary engagement, or Involuntary disengagement.

C. Adjustment

1. No significant differences between groups on any self or parent-reported BASC scales.
2. If attachment was controlled for: the cancer group reported fewer self-reported emotional symptoms than the comparison group and parents reported less externalizing problems in the cancer group.

D. Testing of Moderation

1. Attachment style was a moderator for self-reported social stress/anxiety/depression only.
2. Teens with avoidant attachment in the cancer group reported fewer symptoms than those in the comparison group

II. Combined Group Analyses

A. Attachment and coping

1. RQ
    a. Primary control coping rates were highest for securely attached individuals, followed by: ambivalent, avoidant, and fearful.
    b. Secondary control coping rates were highest for secure and avoidant styles followed by: ambivalent and fearful styles.
    c. Effortful disengagement rates were highest for avoidant style followed by: fearful, secure, and ambivalent styles.
    d. Involuntary engagement rates were highest for ambivalent style followed by: fearful, avoidant, and secure styles.

e. Involuntary Disengagement rates were highest for fearful style followed by: ambivalent, avoidant, and secure styles.

2. RAQ
    a. Primary control coping was negatively correlated with anxiety about separation, feared loss, availability, and use of caregiver.
    b. Secondary control coping was also negatively correlated with anxiety about separation, feared loss, availability, and use of caregiver.
    c. Effortful disengagement was positively correlated with anxiety about feared loss, availability, and use of caregiver.
    d. Involuntary engagement was positively correlated with anxiety about separation, feared loss, availability, and use of caregiver.
    e. Involuntary disengagement was positively correlated with anxiety about separation, feared loss, availability, and use of caregiver.

B. Attachment and Adjustment

1. Self-reported
    a. Clinical maladjustment (SR-CMal), emotional symptoms (SR-ESI), and social stress/anxiety/depression (SR-SAD) triad scores were all highest for fearful attachment style followed by: ambivalent, avoidant, and secure styles.
    b. Overall personal adjustment (SR-PAdj) was highest for secure style followed by: avoidant, ambivalent, and fearful styles.
2. Parent-reported
    a. PR-Internalizing problems were highest for fearful attachment style followed by: ambivalent, avoidant, and secure styles. There were no differences in parent report-externalizing symptoms.

C. Stress responses and Adjustment

1. Clinical Maladjustment, emotional symptoms, and SAD triad were all predicted by: lower primary control coping, higher effortful disengagement, higher involuntary engagement, and higher involuntary disengagement.
2. School Maladjustment was only predicted by Involuntary Disengagement and being male.

D. Testing of the overall model

1. Clinical maladjustment was predicted by attachment style, lower overall coping, and higher stress responses.
2. Higher CMal was related to fearful style followed by: ambivalent, avoidant, and secure styles.

III. Within cancer group analyses

A. Contrasts for cancer variables

1. Attachment

a. Neither stage nor perceived severity was related to attachment style.
b. Amount of knowledge about cancer was related to attachment style with secure style reporting the most information followed by: avoidant, fearful, and ambivalent.

2. Stress responses

a. Amount of knowledge provided was negatively correlated with involuntary disengagement.
b. Perceived severity was positively correlated with involuntary engagement.
c. Overall effect of cancer on life was positively correlated with involuntary engagement and negatively correlated with secondary control coping.
d. Number of cancer related stressors was positively correlated with involuntary engagement and disengagement and negatively correlated with primary and secondary control coping.
e. Degree of cancer-related stress was positively correlated with involuntary engagement and disengagement and negatively correlated with secondary control coping.

3. Adjustment

a. Amount of information provided was negatively correlated with SR-ESI and SR-SAD and positively correlated with SR-PAdj .
b. Perceived severity was positively correlated with SR-PAdj.
c. Overall effect of cancer on life was positively correlated with SR-CMal, SR-SAD, SR-PAdj, and PR-Int.
d. Number of cancer related stressors was positively correlated with SR-ESI, SR-CMal, SR-SAD, and PR-Int.

e. Degree of cancer-related stress was positively correlated with SR-ESI, SR-CMal, SR-SAD, and PR-Int.

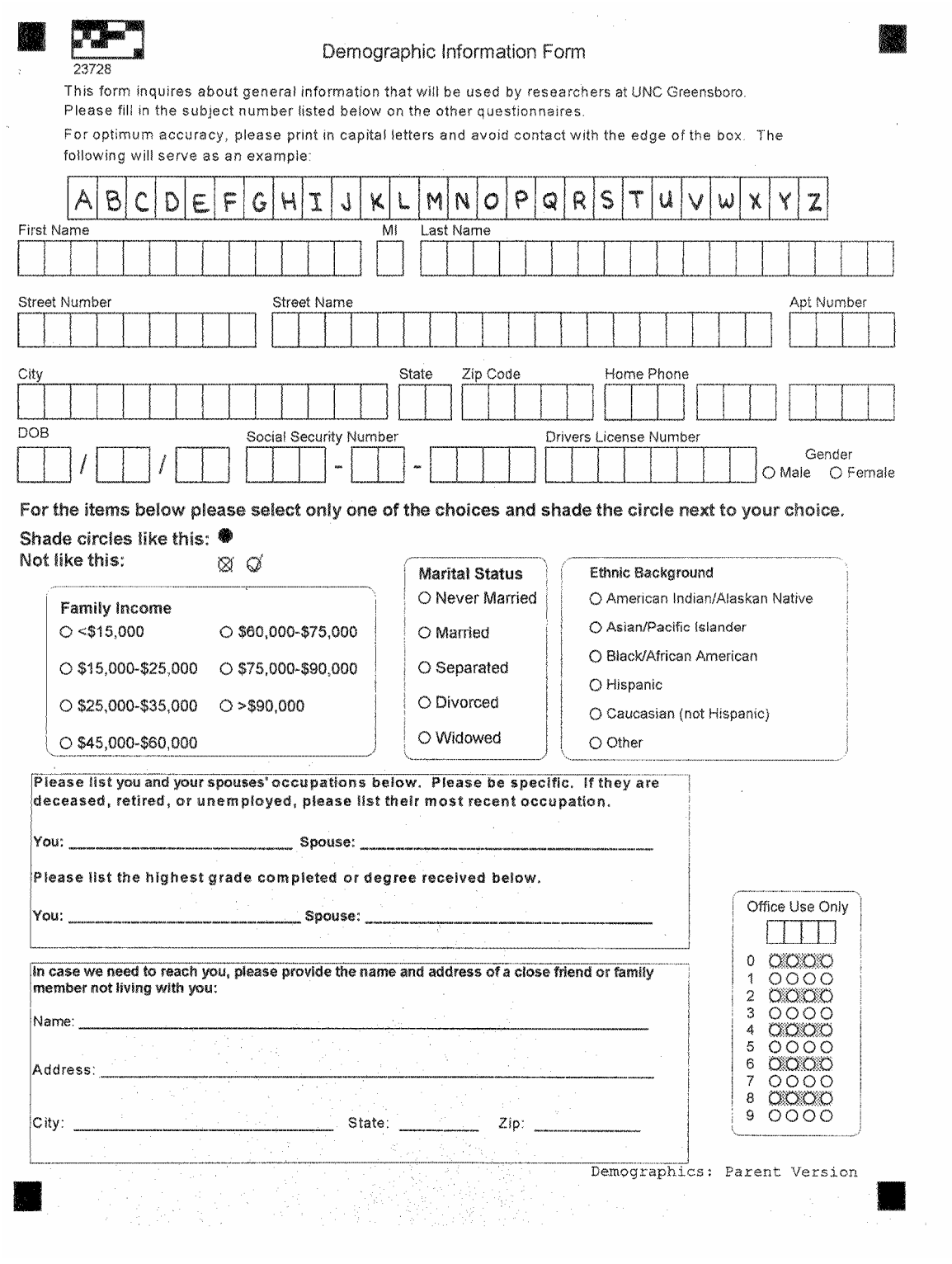
4. Parent variables
    a. Parent BSI did not significantly impact adolescent attachment OR.coping.
    b. Parental adjustment did not impact adolescent self-report of adjustment problems.
    c. Parental adjustment did impact parental report of adolescent adjustment problems (higher internalizing and externalizing).

B. Testing of Mediation
    1. Attachment style fully mediated the effects of cancer-related stressors on SR-ESI.
    2. The reverse model (with SR-ESI and attachment predicting stressors) was not significant.

[a] Please note the following:

SR-ESI=	self-reported emotional symptoms
SR-CMal=	self-reported clinical maladjustment
SR-SMal=	self-reported school maladjustment
SR-SAD=	self-reported social stress/anxiety/depression triad
PR-Ext=	parent-reported externalizing disorders
PR-Int=	parent-reported internalizing disorders

Appendix D. ASSESSMENT MEASURES



23728

Demographic Information Form

This form inquires about general information that will be used by researchers at UNC Greensboro. Please fill in the subject number listed below on the other questionnaires.

For optimum accuracy, please print in capital letters and avoid contact with the edge of the box. The following will serve as an example:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

First Name | MI | Last Name

Street Number | Street Name | Apt Number

City | State | Zip Code | Home Phone

DOB (/ /) | Social Security Number (- -) | Drivers License Number | Gender ○ Male ○ Female

For the items below please select only one of the choices and shade the circle next to your choice.

Shade circles like this: ●

Not like this: ⊠ ✓

Family Income

- ○ <$15,000
- ○ $15,000-$25,000
- ○ $25,000-$35,000
- ○ $45,000-$60,000
- ○ $60,000-$75,000
- ○ $75,000-$90,000
- ○ >$90,000

Marital Status

- ○ Never Married
- ○ Married
- ○ Separated
- ○ Divorced
- ○ Widowed

Ethnic Background

- ○ American Indian/Alaskan Native
- ○ Asian/Pacific Islander
- ○ Black/African American
- ○ Hispanic
- ○ Caucasian (not Hispanic)
- ○ Other

Please list you and your spouses' occupations below. Please be specific. If they are deceased, retired, or unemployed, please list their most recent occupation.

You: _____ **Spouse:** _____

Please list the highest grade completed or degree received below.

You: _____ **Spouse:** _____

In case we need to reach you, please provide the name and address of a close friend or family member not living with you:

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Office Use Only

0 ○○○○
1 ○○○○
2 ○○○○
3 ○○○○
4 ○○○○
5 ○○○○
6 ○○○○
7 ○○○○
8 ○○○○
9 ○○○○

Demographics: Parent Version

24810

Demographic Information Form

This form inquires about general information that will be used by researchers at UNC Greensboro. Please fill in the subject number listed below on the other questionnaires.

For optimum accuracy, please print in capital letters and avoid contact with the edge of the box. The following will serve as an example:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

First Name | MI | Last Name

Street Number | Street Name | Apt Number

City | State | Zip Code | Home Phone

DOB ___ / ___ / ___ Social Security Number ___ - ___ - ___ Drivers License Number

Gender ○ Male ○ Female

For the items below please select only one of the choices and shade the circle next to your choice.

Shade circles like this: ●

Not like this: ⊗ ✓

Grade

○ 5th Grade ○ 9th Grade

○ 6th Grade ○ 10th Grade

○ 7th Grade ○ 11th Grade

○ 8th Grade ○ 12th Grade

Ethnic Background

○ American Indian/Alaskan Native

○ Asian/Pacific Islander

○ Black/African American

○ Hispanic

○ Caucasian (not Hispanic)

○ Other

Current Grade Point Average

Please enter your current GPA below.

GPA = ___ . ___

How good is your health?

○ Excellent ○ Fair

○ Very Good ○ Poor

○ Good

In case we need to reach you, please provide the name and address of a close friend or family member not living with you:

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Office Use Only

0 1 2 3 4 5 6 7 8 9

Demographics: Adolescent Version

8267

Background Information

1. *Family Characteristics:*

Name of Child Participating:

Number of Children Under Age 18 Living in Your Home

○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5+

In relation to the Child participating in this study I am the:

- ○ Child's Birth Mother
- ○ Child's Birth Father
- ○ Child's Adoptive Mother
- ○ Child's Adoptive Father
- ○ Child's Step-mother
- ○ Child's Grandparent
- ○ Child's Aunt/Uncle
- ○ Family Friend
- ○ Child's Step-father
- ○ Child's sister/ brother
- ○ Parent's partner
- ○ Other Relative
- ○ Foster Parent

In the Past Year Our Family has Experienced:

- ○ Divorce
- ○ Separation
- ○ Remarriage
- ○ Death of Parent
- ○ Major Move
- ○ Birth of New Baby
- ○ Child left for College
- ○ Other Change

The person who is most responsible for this child's care is:

- ○ Child's Birth Mother
- ○ Child's Birth Father
- ○ Child's Adoptive Mother
- ○ Child's Adoptive Father
- ○ Child's Step-mother
- ○ Child's Grandparent
- ○ Child's Aunt/Uncle
- ○ Family Friend
- ○ Child's Step-father
- ○ Child's sister or brother
- ○ Parent's partner
- ○ Other Relative
- ○ Foster Parent

Also living in my home is:

- ○ Child's Father
- ○ Child's Mother
- ○ Child's Step-parent
- ○ Child's Grandparent
- ○ Child's Aunt/Uncle
- ○ Other friend or relative

Parent version

7113

Health History

1. Current Health

Do you currently have any of the following illnesses?

- ○ Diabetes
- ○ Heart Disease
- ○ Arthritis
- ○ High Blood Pressure
- ○ Asthma or COPD
- ○ Chronic Pain
- ○ Intestinal Disease
- ○ Cancer
- ○ Multiple Schlerosis
- ○ Depression
- ○ Other Chronic Illness

Describe:

How would you rate your current physical health?

- ○ Excellent
- ○ Very good
- ○ Good
- ○ Fair
- ○ Poor
- ○ Very Poor

How would you rate your current mental health?

- ○ Excellent
- ○ Very good
- ○ Good
- ○ Fair
- ○ Poor
- ○ Very Poor

2. Past Health

In the past 15 years did you have any of the following illnesses?

- ○ Diabetes
- ○ Heart Disease
- ○ Arthritis
- ○ High Blood Pressure
- ○ Asthma or COPD
- ○ Chronic Pain
- ○ Intestinal Disease
- ○ Cancer
- ○ Multiple Schlerosis
- ○ Depression
- ○ Other Chronic Illness

How would you rate your overall physical health in the past 15 years?

- ○ Excellent
- ○ Very good
- ○ Good
- ○ Fair
- ○ Poor
- ○ Very Poor

How would you rate your overall mental health in the past 15 years?

- ○ Excellent
- ○ Very good
- ○ Good
- ○ Fair
- ○ Poor
- ○ Very Poor

How many times have you been hospitalized for one week or more?

○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 or more

How many times have you had major surgery?

○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 or more

During the last week how many DAYS did you:

1. Exercise 30 minutes or more? ○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7
2. Drink more than 1 serving of alcohol? ○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7
3. Smoked at least one cigarette? ○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7
4. Ate 3 or more servings of fruit or vegetables? ○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7

43198

Adolescent Background Information

1. *Family Characteristics:*

Name of parent participating:

Number of Children Under Age 18 Living in Your Home

○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5+

In the Past Year Our Family has Experienced:

- ○ Divorce
- ○ Separation
- ○ Remarriage
- ○ Death of Parent
- ○ Major Move
- ○ Birth of New Baby
- ○ Child left for College
- ○ Other Change

The person most responsible for taking care of me is my:

- ○ Birth Mother
- ○ Birth Father
- ○ Adoptive Mother
- ○ Adoptive Father
- ○ Step-mother
- ○ Grandparent
- ○ Aunt/Uncle
- ○ Family Friend
- ○ Step-father
- ○ sister or brother
- ○ Parent's partner
- ○ Other Relative
- ○ Foster Parent

The person who is participating with me in this study is my:

- ○ Birth Mother
- ○ Birth Father
- ○ Adoptive Mother
- ○ Adoptive Father
- ○ Step-mother
- ○ Grandparent
- ○ Aunt/Uncle
- ○ Family Friend
- ○ Step-father
- ○ sister or brother
- ○ Parent's partner
- ○ Other Relative
- ○ Foster Parent

Also living in my home is:

- ○ Father
- ○ Mother
- ○ Step-parent
- ○ Grandparent
- ○ Aunt/Uncle
- ○ Other friend or relative

2. *Parents Health History*

Do either of your parents have any of these illnesses?

- ○ Diabetes
- ○ Heart Disease
- ○ Arthritis
- ○ High Blood Pressure
- ○ Asthma or COPD
- ○ Chronic Pain
- ○ Intestinal Disease
- ○ Cancer
- ○ Multiple Schlerosis
- ○ Depression
- ○ Other Chronic Illness

Describe:

How would you rate your parent's physical health?

- ○ Excellent
- ○ Very good
- ○ Good
- ○ Fair
- ○ Poor
- ○ Very Poor

How would you rate your parent's mental health?

- ○ Excellent
- ○ Very good
- ○ Good
- ○ Fair
- ○ Poor
- ○ Very Poor

How many times has your parent been hospitalized for one week or more?

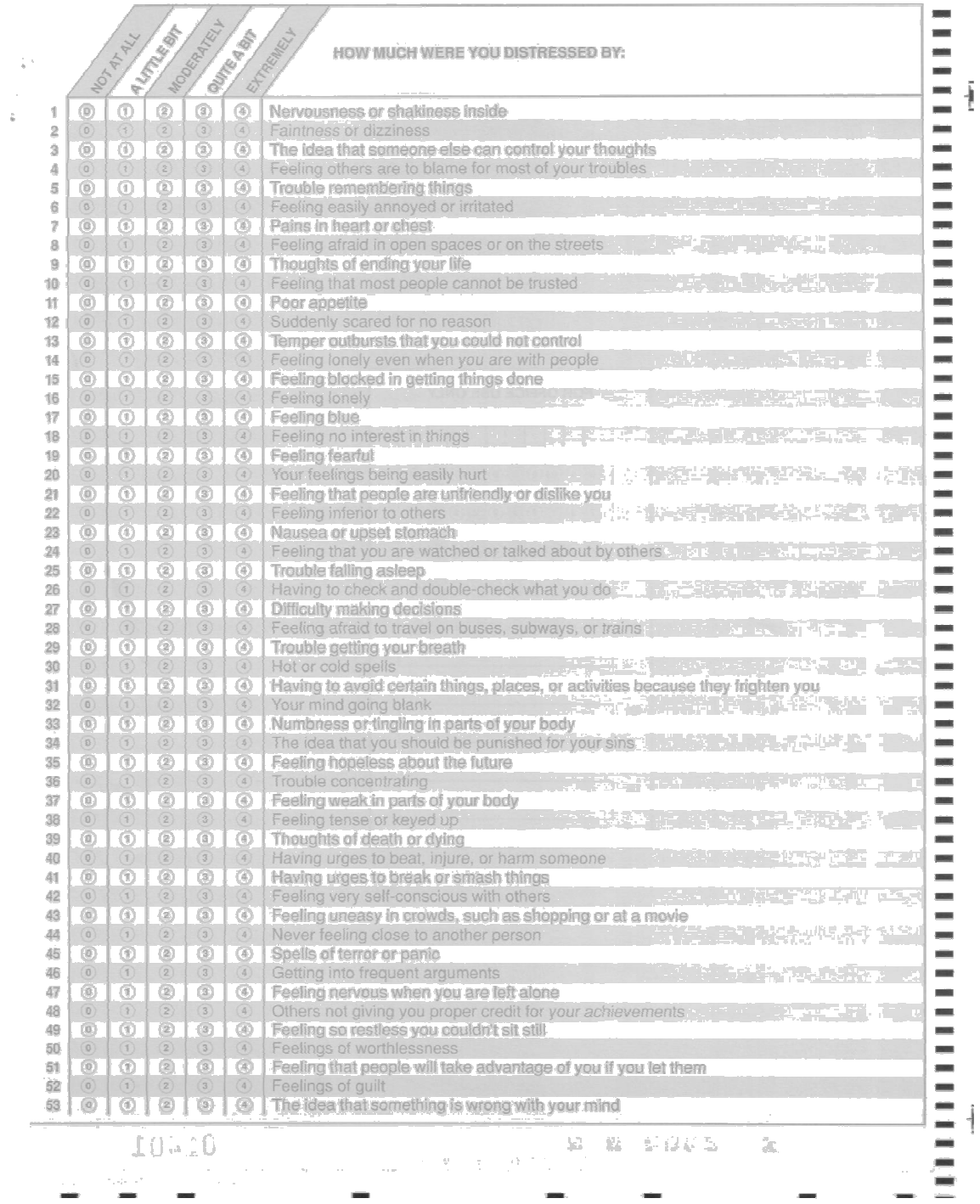
○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 or more

How many times has your parent had major surgery?

○ 0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 or more

Adolescent version

BSI



	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	HOW MUCH WERE YOU DISTRESSED BY:
1	0	1	2	3	4	Nervousness or shakiness inside
2	0	1	2	3	4	Faintness or dizziness
3	0	1	2	3	4	The idea that someone else can control your thoughts
4	0	1	2	3	4	Feeling others are to blame for most of your troubles
5	0	1	2	3	4	Trouble remembering things
6	0	1	2	3	4	Feeling easily annoyed or irritated
7	0	1	2	3	4	Pains in heart or chest
8	0	1	2	3	4	Feeling afraid in open spaces or on the streets
9	0	1	2	3	4	Thoughts of ending your life
10	0	1	2	3	4	Feeling that most people cannot be trusted
11	0	1	2	3	4	Poor appetite
12	0	1	2	3	4	Suddenly scared for no reason
13	0	1	2	3	4	Temper outbursts that you could not control
14	0	1	2	3	4	Feeling lonely even when you are with people
15	0	1	2	3	4	Feeling blocked in getting things done
16	0	1	2	3	4	Feeling lonely
17	0	1	2	3	4	Feeling blue
18	0	1	2	3	4	Feeling no interest in things
19	0	1	2	3	4	Feeling fearful
20	0	1	2	3	4	Your feelings being easily hurt
21	0	1	2	3	4	Feeling that people are unfriendly or dislike you
22	0	1	2	3	4	Feeling inferior to others
23	0	1	2	3	4	Nausea or upset stomach
24	0	1	2	3	4	Feeling that you are watched or talked about by others
25	0	1	2	3	4	Trouble falling asleep
26	0	1	2	3	4	Having to check and double-check what you do
27	0	1	2	3	4	Difficulty making decisions
28	0	1	2	3	4	Feeling afraid to travel on buses, subways, or trains
29	0	1	2	3	4	Trouble getting your breath
30	0	1	2	3	4	Hot or cold spells
31	0	1	2	3	4	Having to avoid certain things, places, or activities because they frighten you
32	0	1	2	3	4	Your mind going blank
33	0	1	2	3	4	Numbness or tingling in parts of your body
34	0	1	2	3	4	The idea that you should be punished for your sins
35	0	1	2	3	4	Feeling hopeless about the future
36	0	1	2	3	4	Trouble concentrating
37	0	1	2	3	4	Feeling weak in parts of your body
38	0	1	2	3	4	Feeling tense or keyed up
39	0	1	2	3	4	Thoughts of death or dying
40	0	1	2	3	4	Having urges to beat, injure, or harm someone
41	0	1	2	3	4	Having urges to break or smash things
42	0	1	2	3	4	Feeling very self-conscious with others
43	0	1	2	3	4	Feeling uneasy in crowds, such as shopping or at a movie
44	0	1	2	3	4	Never feeling close to another person
45	0	1	2	3	4	Spells of terror or panic
46	0	1	2	3	4	Getting into frequent arguments
47	0	1	2	3	4	Feeling nervous when you are left alone
48	0	1	2	3	4	Others not giving you proper credit for your achievements
49	0	1	2	3	4	Feeling so restless you couldn't sit still
50	0	1	2	3	4	Feelings of worthlessness
51	0	1	2	3	4	Feeling that people will take advantage of you if you let them
52	0	1	2	3	4	Feelings of guilt
53	0	1	2	3	4	The idea that something is wrong with your mind

BASC- Parent version

Please read each phrase and mark the response that describes how this child has acted over the last six months. If the child's behavior has changed a great deal during this period, describe the child's recent behavior.

Mark **N** if the behavior **never** occurs	Mark **O** if the behavior **often** occurs.
Mark **S** if the behavior **sometimes** occurs.	Mark **A** if the behavior **almost always** occurs.

Please mark every item. If you don't know or are unsure, give your best estimate, based on your own observations. A "Never" response does not mean that a child "never" engages in a behavior, only that you have not observed the child to behave that way. If you wish to change an answer, erase the first answer completely, then mark your new answer.

1. Compliments others	N	S	O	A
2. Bullies others	N	S	O	A
3. Has trouble getting to sleep	N	S	O	A
4. Forgets things	N	S	O	A
5. Sees things that are not there	N	S	O	A
6. Is in trouble with the police	N	S	O	A
7. Says, "I want to kill myself."	N	S	O	A
8. Needs too much supervision	N	S	O	A
9. Is creative	N	S	O	A
10. Complains of shortness of breath	N	S	O	A
11. Avoids competing with other adolescents	N	S	O	A
12. Begins conversations appropriately	N	S	O	A
13. Dares other children to do things	N	S	O	A
14. Says, "I'm not very good at this."	N	S	O	A
15. Stutters	N	S	O	A
16. Has strange ideas	N	S	O	A
17. Steals at home	N	S	O	A
18. Complains about being teased	N	S	O	A
19. Is restless during movies	N	S	O	A
20. Makes decisions easily	N	S	O	A
21. Complains of being cold	N	S	O	A
22. Will change direction to avoid having to greet someone	N	S	O	A
23. Encourages others to do their best	N	S	O	A
24. Orders others around	N	S	O	A
25. Says, "I'm afraid I will make a mistake."	N	S	O	A
26. Plays with fire	N	S	O	A
27. Runs away from home overnight	N	S	O	A
28. Pouts	N	S	O	A
29. Acts without thinking	N	S	O	A
30. Is energetic	N	S	O	A
31. Complains of chest pain	N	S	O	A
32. Drinks alcoholic beverages	N	S	O	A
33. Politely asks for help	N	S	O	A
34. Is a "sore loser"	N	S	O	A
35. Is nervous	N	S	O	A
36. Has a short attention span	N	S	O	A
37. Seems out of touch with reality	N	S	O	A
38. Smokes or chews tobacco	N	S	O	A
39. Cries easily	N	S	O	A
40. Throws tantrums	N	S	O	A
41. Has lots of ideas	N	S	O	A
42. Complains of dizziness	N	S	O	A
43. Is shy with adults	N	S	O	A
44. Responds when spoken to	N	S	O	A
45. Argues when denied own way	N	S	O	A
46. Gets ill before a major school test	N	S	O	A
47. Completes work on time	N	S	O	A
48. Stares blankly	N	S	O	A
49. Complains about police or other law enforcement officers	N	S	O	A
50. Says, "I hate myself."	N	S	O	A
51. Cannot wait to take turn	N	S	O	A
52. Is usually chosen as a leader	N	S	O	A
53. Has headaches	N	S	O	A
54. Refuses to join group activities	N	S	O	A
55. Uses appropriate table manners	N	S	O	A
56. Threatens to hurt others	N	S	O	A
57. Wakes up scared after dreams	N	S	O	A
58. Complains about being unable to block out unwanted thoughts	N	S	O	A
59. Has been suspended from school	N	S	O	A
60. Is sad	N	S	O	A
61. Interrupts parents when they are talking on the phone	N	S	O	A
62. Will speak up if the situation calls for it	N	S	O	A
63. Has allergic reactions	N	S	O	A
64. Is more influenced by friends than by parents	N	S	O	A
65. Says, "please" and "thank you"	N	S	O	A
66. Blames others	N	S	O	A
67. Is fearful	N	S	O	A
68. Has trouble concentrating	N	S	O	A

Please Go On To Page 4

Remember: N - Never S - Sometimes O - Often A - Almost Always

69. Tries to hurt self
70. Uses foul language
71. Changes moods quickly
72. Taps foot or pencil
73. Is good at getting people to work together
74. Complains about health
75. Avoids other adolescents
76. Tries to bring out the best in other people
77. Hits other children
78. Worries about things that cannot be changed
79. Listens to directions
80. Repeats one activity over and over
81. Gets into trouble in the neighborhood
82. Says, "Nobody understands me."
83. Is overly active
84. Attends after-school activities
85. Complains of being hot
86. Is shy with other adolescents
87. Volunteers to help with things
88. Is cruel to animals
89. Sleeps with parents
90. Eats things that are not food
91. Lies
92. Is easily upset
93. Uses medication
94. Joins clubs or social groups
95. Makes frequent visits to the doctor
96. Shows interest in others' ideas
97. Teases others
98. Worries
99. Completes homework from start to finish without taking a break
100. Gets lost
101. Lies to get out of trouble
102. Says, "Nobody likes me."
103. Interrupts others when they are speaking
104. Gives good suggestions for solving problems
105. Has stomach problems
106. Refuses to talk
107. Makes suggestions without offending others
108. Breaks other children's things
109. Is afraid of dying
110. Is easily distracted
111. Hears sounds that are not there
112. Uses illegal drugs
113. Says, "I want to die" or "I wish I were dead."
114. Fiddles with things while at meals
115. Is a "self-starter"
116. Complains of pain
117. Has trouble making new friends
118. Smiles at others
119. Has muscle spasms
120. Has a hearing problem
121. Says, "I'm afraid I'll hurt someone."
122. Has friends who are in trouble
123. Has seizures
124. Has eye problems
125. Works well under pressure
126. Gets sick

DO NOT MARK IN THIS AREA

007834

BASC-Adolescent Version

Read each sentence carefully. If you agree with the sentence, fill in the oval with the **T** for **True**. If you do not agree with it, fill in the oval with the **F** for **False**. Here is an example:

I like parties ● Ⓕ

If you want to change your answer, erase it completely, then mark your new answer. Please respond to each sentence truthfully as it applies to you. There are no right or wrong answers. Do not skip any sentences.

1. I am good at making new friends. Ⓣ Ⓕ
2. I can't seem to control what happens to me. Ⓣ Ⓕ
3. I don't like thinking about school. Ⓣ Ⓕ
4. I like who I am. Ⓣ Ⓕ
5. I am afraid of a lot of things. Ⓣ Ⓕ
6. I like to argue. Ⓣ Ⓕ
7. I don't seem to do anything right. Ⓣ Ⓕ
8. People act as if they don't hear me. Ⓣ Ⓕ
9. I always go to bed on time. Ⓣ Ⓕ
10. I am an important person in my family. Ⓣ Ⓕ
11. Someone wants to hurt me. Ⓣ Ⓕ
12. Teachers are neat people. Ⓣ Ⓕ
13. Stealing something from a store is exciting. Ⓣ Ⓕ
14. I never quite reach my goal. Ⓣ Ⓕ
15. I am a healthy person. Ⓣ Ⓕ
16. I am a likable person. Ⓣ Ⓕ
17. My parents expect too much from me. Ⓣ Ⓕ
18. School is a waste of time. Ⓣ Ⓕ
19. I worry about what other people think about me. Ⓣ Ⓕ
20. I like it when my friends dare me to do something. Ⓣ Ⓕ
21. No one understands me. Ⓣ Ⓕ
22. Sometimes I feel lonely, even when there are people with me. Ⓣ Ⓕ
23. I like everyone I meet. Ⓣ Ⓕ
24. I hear voices in my head. Ⓣ Ⓕ
25. My teacher understands me. Ⓣ Ⓕ
26. I have not seen a car in at least six months. Ⓣ Ⓕ
27. When I take tests, I can't think. Ⓣ Ⓕ
28. I have fainting spells. Ⓣ Ⓕ
29. Little things bother me a lot. Ⓣ Ⓕ
30. I have been in the principal's office at least five times. Ⓣ Ⓕ
31. I am good at making decisions. Ⓣ Ⓕ
32. I need help to get along with others. Ⓣ Ⓕ
33. My parents blame too many of their problems on me. Ⓣ Ⓕ
34. I wish there were no report cards. Ⓣ Ⓕ
35. My looks bother me. Ⓣ Ⓕ
36. My feelings get hurt easily. Ⓣ Ⓕ
37. I like to be scared. Ⓣ Ⓕ
38. I just don't care anymore. Ⓣ Ⓕ
39. Other people are against me. Ⓣ Ⓕ
40. I always do homework on time. Ⓣ Ⓕ
41. My mother and father help me if I ask them to. Ⓣ Ⓕ
42. Sometimes I want to hurt myself. Ⓣ Ⓕ
43. My teachers want too much. Ⓣ Ⓕ
44. The local newspaper has a story about me almost every day. Ⓣ Ⓕ
45. I don't like other people to know my grades. Ⓣ Ⓕ
46. I am afraid I have cancer. Ⓣ Ⓕ
47. Others have respect for me. Ⓣ Ⓕ
48. My parents control my life. Ⓣ Ⓕ
49. I hate school. Ⓣ Ⓕ
50. I worry about little things. Ⓣ Ⓕ
51. I like to play rough sports. Ⓣ Ⓕ
52. I think I am dumb next to my friends. Ⓣ Ⓕ
53. I am left out of things. Ⓣ Ⓕ
54. I get mad at my parents sometimes. Ⓣ Ⓕ
55. Sometimes I do things over and over and can't stop. Ⓣ Ⓕ
56. My teacher is always telling me what to do. Ⓣ Ⓕ
57. What I want never seems to matter. Ⓣ Ⓕ
58. I usually fail. Ⓣ Ⓕ
59. Other people are healthier than I am. Ⓣ Ⓕ
60. I worry about what is going to happen. Ⓣ Ⓕ
61. I see weird things. Ⓣ Ⓕ
62. I am good at showing others how to do things. Ⓣ Ⓕ
63. People think I am fun to be with. Ⓣ Ⓕ
64. I can't cope with all my responsibilities at home. Ⓣ Ⓕ
65. I don't care about school. Ⓣ Ⓕ
66. I wish I were someone else. Ⓣ Ⓕ
67. I am afraid of being "put down" by a teacher. Ⓣ Ⓕ
68. I would rather work for the FBI than be a teacher. Ⓣ Ⓕ
69. I never have anything to do that is really fun. Ⓣ Ⓕ
70. Sometimes I feel as if I am invisible. Ⓣ Ⓕ
71. My social life is just perfect. Ⓣ Ⓕ
72. My parents trust me. Ⓣ Ⓕ
73. I itch on the inside. Ⓣ Ⓕ
74. Most teachers are unfair. Ⓣ Ⓕ
75. Superman is a real person. Ⓣ Ⓕ
76. I want to do better, but I can't. Ⓣ Ⓕ
77. I often have headaches. Ⓣ Ⓕ
78. I enjoy making new friends. Ⓣ Ⓕ
79. I am blamed for a lot of things I don't do. Ⓣ Ⓕ
80. My school feels good to me. Ⓣ Ⓕ
81. I have trouble making up my mind. Ⓣ Ⓕ
82. I love thunderstorms. Ⓣ Ⓕ
83. Nothing goes my way. Ⓣ Ⓕ
84. I feel really "stressed out." Ⓣ Ⓕ
85. I always think before I act. Ⓣ Ⓕ
86. When I am angry, I throw things. Ⓣ Ⓕ
87. Most teachers are lazy. Ⓣ Ⓕ
88. People say bad things to me. Ⓣ Ⓕ
89. Tests are not fair to most people. Ⓣ Ⓕ
90. Sometimes my ears hurt for no reason. Ⓣ Ⓕ

Please Go On To Page 4

Remember: T - True F - False

91. My classmates don't like me. T F
92. I go from happy to mad very fast. T F
93. I am dependable. T F
94. I feel close to others. T F
95. People get mad at me, even when I don't do anything wrong. T F
96. I can hardly wait to quit school. T F
97. I get upset about my looks. T F
98. I worry a lot of the time. T F
99. I like motorcycles. T F
100. Nothing about me is right. T F
101. I feel that others do not like the way I do things. T F
102. I feel bad when people criticize me. T F
103. My parents are often proud of me. T F
104. My skin feels funny sometimes. T F
105. Teachers mostly look for the bad things that you do. T F
106. Nothing ever goes right for me. T F
107. I am always disappointed with my grades. T F
108. My stomach gets upset more than most people. T F
109. I am liked by others. T F
110. I can't stop myself from making mistakes. T F
111. Finishing my work is important to me. T F
112. I feel guilty about things. T F
113. I like to ride in a car that is going fast. T F
114. Nobody ever listens to me. T F
115. I am lonely. T F
116. I sometimes get mad. T F
117. I cannot control my thoughts. T F
118. I hide my work when the teacher walks by. T F
119. My parents are always right. T F
120. When you fail at something, give up and go on to something else. T F
121. Often I feel sick in my stomach. T F
122. Other kids hate to be with me. T F
123. Sometimes, when alone, I hear my name. T F
124. I like to make decisions on my own. T F
125. People like me because I am easy to talk to. T F
126. People expect too much from me. T F
127. I get bored in school. T F
128. I like the way I look. T F
129. I often worry about something bad happening to me. T F
130. I like loud music. T F
131. Life is getting worse and worse. T F
132. Other children are happier than I am. T F
133. I tell the truth every single time. T F
134. My parents listen to what I say. T F
135. I have many accidents. T F
136. My teacher cares about me. T F
137. I take a plane trip from New York to Chicago at least twice a week. T F
138. I do not like to be called on in class. T F
139. Sore throats are a common problem of mine. T F
140. I enjoy meeting others. T F
141. I get blamed for things I can't help. T F
142. I am nice looking. T F
143. I am nervous. T F
144. I like to take chances. T F
145. Adults have a better life than I do. T F
146. I feel out of place around people. T F
147. I always do what my parents tell me. T F
148. I like to make up strange stories. T F
149. My mother and father like my friends. T F
150. I am sometimes jealous. T F
151. I am seldom happy with my efforts at school. T F
152. I think I have heart trouble. T F
153. Nobody likes me. T F
154. Sometimes voices tell me to do bad things. T F
155. When I am wrong I can change things to be right again. T F
156. My friends are usually kind to me. T F
157. Bad things just happen. T F
158. School is boring. T F
159. I wish I were different. T F
160. I get nervous when things do not go the right way for me. T F
161. I get into fights at school. T F
162. I am good at only one or two things. T F
163. Other people always find things wrong with me. T F
164. I am the most popular person in town. T F
165. I help make decisions at home. T F
166. I often have bad dreams. T F
167. My teacher is often proud of me. T F
168. Television does not really exist. T F
169. I quit easily. T F
170. I have trouble swallowing my food. T F
171. I am slow to make new friends. T F
172. My parents are always telling me what to do. T F
173. I have nice hair. T F
174. I worry when I go to bed at night. T F
175. I think it would be exciting to steal things. T F
176. I always have bad luck. T F
177. My friends have more fun than I do. T F
178. I have some bad habits. T F
179. I still have fits of temper. T F
180. I like to be close to my parents. T F
181. I have just returned from a nine-month trip on an ocean liner. T F
182. I often get sick before tests. T F
183. I am a dependable friend. T F
184. Other children don't like to be with me. T F
185. I cannot stop myself from doing bad things. T F
186. I am someone you can rely on. T F

DO NOT MARK IN THIS AREA

2512

7507

Responses to Stress Questionnaire- Parent Report

A. Even when things are going well for teenagers, almost everyone still has some tough times getting along with other people, espcially other teenagers.

1. So that we can find out how things have been going for your teenager lately, please put a check mark by all the things on this list that you think have been a problem for him or her since the start of the school year.

- O Being around kids that are rude
- O Not having as many friends as he or she wants
- O Having someone stop being his or her friend
- O Being teased or hassled by other kids
- O Feeling pressured to do something
- O Fighting with other kids
- O Having problems with a friend
- O Being left out or rejected
- O Asking someone out and being turned down

Is there anything else has been a problem for your teenager with other kids?

2. Bubble in the number that shows how stressful these problems have been for your teenager, or how much these problems have bothered him or her:

O Not at all O A little O Some O A lot

7716

B. Below is a list of things that people sometimes do, think, or feel when something stressful happens. Everybody deals with problems in their own way- some people do a lot of the things on this list or have many feelings, other people just do or think a few things.

Think of the social situations you checked off on the last page that have been stressful to your teenager since school began. For each item below, fill in the bubble that means not at all, a little, some, or a lot that shows how much you believe that your adolescent does or feels these things when confronted with problems with other kids. For some items, you may not know for sure how your adolescent would respond but just make your best guess based on your observations of him or her. Please let us know about everything that you think your teenager does, thinks, and feels, even if you don't think it helps to make things better.

When dealing with problems with other kids, my teenager...	Not at all	A Little	Some	A Lot
1. tries not to feel anything.	○	○	○	○
2. feels sick to his/her stomach or gets headaches.	○	○	○	○
3. tries to think of different ways to change the problem or fix the situation.	○	○	○	○
4. doesn't feel anything at all, like he or she has no feelings.	○	○	○	○
5. wishes s/he was stronger, smarter, or better so things would be different.	○	○	○	○
6. keeps remembering what happened or can't stop thinking about what might happen.	○	○	○	○
7. My teenager lets someone or something know how s/he feels	○	○	○	○
8. decides that s/he is okay the way they are, even though s/he is not perfect.	○	○	○	○
9. When s/he is around other people they act like the problems never happened.	○	○	○	○
10. My teenager just has to get away, s/he can't stop him/herself.	○	○	○	○
11. My teenager deals with the problem by wishing it would just go away, that everything would work itself out.	○	○	○	○
12. S/he gets really jumpy.	○	○	○	○
13. S/he realizes that s/he just has to live with things the way they are.	○	○	○	○
14. S/he just can't be near anything that reminds him/her of the problem.	○	○	○	○
15. S/he tries not to think about it, to forget all about it.	○	○	○	○
16. S/he really doesn't know what to feel.	○	○	○	○
17. S/he asks other people for help or ideas about how to make the problem better.	○	○	○	○
18. When my teenager has problems with other kids, s/he can't stop thinking about them when s/he tries to sleep or has bad dreams about them.	○	○	○	○
19. S/he tells him/herself that s/he can get through this.	○	○	○	○
20. S/he lets their feelings out.	○	○	○	○
21. S/he gets help from other people when s/he is trying to figure out how to deal with his or her feelings.	○	○	○	○
22. My teenager just can't get him or herself to face the problem or situation.	○	○	○	○
23. S/he wishes that someone would just come and get them out of the mess.	○	○	○	○
24. S/he does something to try to fix the problem or change things.	○	○	○	○
25. Thoughts about problems with other kids just pop into his or her head.	○	○	○	○
26. My teenager feels it in his or her body	○	○	○	○

7716

Good Job! You are HALF done!! Before you keep going--look back at what problems you checked on page one and other problems you wrote down that your adolescent has with other kids. Remember to answer these questions about how your teenager deals with those types of problems!

When dealing with problems with other kids, my teenager...	Not at all	A Little	Some	A Lot
27. tries to stay away from people and things that make him or her feel upset or reminds them of the problem.	○	○	○	○
28. S/he doesn't feel like him or herself, its like s/he is far away from everything.	○	○	○	○
29. S/he just takes things as they are, they go with the flow.	○	○	○	○
30. S/he **thinks about happy things to take his or her mind off the problem or how they are feeling.**	○	○	○	○
31. S/he can't stop thinking about how they are feeling.	○	○	○	○
32. S/he gets sympathy, understanding, or support from someone.	○	○	○	○
33. **When problems with other kids happen, s/he can't always control what they do**	○	○	○	○
34. My teenager tells him or herself things could be worse.	○	○	○	○
35. His/her mind goes blank, s/he can't think at all.	○	○	○	○
36. S/he tells him or herself it doesn't matter, that it isn't a big deal.	○	○	○	○
37. When s/he has problems with other kids s/he feels really: Circle all that apply and fill in the appropriate circle:	○	○	○	○

Angry Sad Scared Worried/anxious None of these

38. It's really hard for him or her to concentrate or pay attention.	○	○	○	○
39. S/he thinks about the things s/he is learning from the situation, or something good that will come out of it.	○	○	○	○
40. S/he can't stop thinking about what s/he did or said.	○	○	○	○
41. S/he says to him or herself "this isn't real"	○	○	○	○
42. S/he ends up just lying around or sleeping a lot.	○	○	○	○
43. My teenager keeps his/her mind off the problems by: Circle all that he or she does and fill in a circle:	○	○	○	○

Exercising Seeing friends Watching TV Playing Video games Doing a hobby Reading

44. S/he gets upset by things that don't usually bother him/her.	○	○	○	○
45. My teenager does something to calm him or herself down Circle all that he or she does:	○	○	○	○

Take deep breaths Pray Walk Listen to music Take a Break Meditate

46. He or she just freezes, they can't do anything.	○	○	○	○
47. Sometimes s/he acts without thinking.	○	○	○	○
48. S/he keeps their feelings under control when they have to, then lets them out when they won't make things worse.	○	○	○	○
49. S/he can't seem to get around to doing things they are supposed to do.	○	○	○	○
50. S/he tells him or herself that everything will be all right.	○	○	○	○
51. S/he can't stop thinking about why this happened to them.	○	○	○	○
52. S/he thinks of ways to laugh about it so it won't seem so bad.	○	○	○	○
53. His or her thoughts start racing.	○	○	○	○
54. S/he imagines something really fun or exciting happening in his or her life.	○	○	○	○
55. S/he can get so upset that they can't remember what happened or what they did.	○	○	○	○
56. S/he tries to believe it never happened.	○	○	○	○
57. Sometimes s/he can't control what they do or say.	○	○	○	○

6229

Responses to Stress Questionnaire- Adolescent Report

A. Even when things are going well for teenagers, almost everyone still has some tough times getting along with other people, espcially other teenagers.

1. So that we can find out how things have been going for you lately, please put a check mark by all the things on this list that have been a problem for you since the start of the school year.

- O Being around kids that are rude
- O Not having as many friends as you want
- O Having someone stop being your friend
- O Being teased or hassled by other kids
- O Feeling pressured to do something
- O Fighting with other kids
- O Having problems with a friend
- O Being left out or rejected
- O Asking someone out and being turned down

Is there anything else has been a problem for you with other kids?

2. Bubble in the number that shows how stressful these problems have been, or how much these problems have bothered you:

O Not at all O A little O Some O A lot

Adolescent report-Social

7757

B. This is a list of things that people sometimes do, think, or feel when something stressful happens. Everybody deals with problems in their own way- some people do a lot of the things on this list or have a bunch of feelings, other people just do or think a few things.

Think of the situations you just checked off. For each item below, fill in the bubble that means not at all, a little, some, or a lot that shows how much you do or feel these things when you have problems with other kids (like the ones you checked off). Some answers ask you to write in a short description but you also need to fill in a bubble for these questions. Please let us know about everything that you do, think, and feel, even if you don't think it helps to make things better.

When dealing with problems with other kids...	Not at all	A Little	Some	A Lot
1. I try not to feel anything.	○	○	○	○
2. I feel sick to my stomach or get headaches.	○	○	○	○
3. I try to think of different ways to change the problem or fix the situation. Write one plan you thought of:	○	○	○	○
4. I don't feel anything at all, like I have no feelings.	○	○	○	○
5. I wish I were stronger, smarter, or better so things would be different.	○	○	○	○
6. I keep remembering what happened or can't stop thinking about what might happen.	○	○	○	○
7. I let someone or something know how I feel (Remember to bubble) Circle who you talked to:	○	○	○	○
Parent Friend Brother/Sister Pet Teacher God Stuffed Animal None of these				
8. I decide I am okay the way I am, even though I'm not perfect.	○	○	○	○
9. When I'm around other people I act like the problems never happened.	○	○	○	○
10. I just have to get away, I can't stop myself.	○	○	○	○
11. I deal with the problem by wishing it would just go away, that everything would work itself out.	○	○	○	○
12. I get really jumpy.	○	○	○	○
13. I realize that I just have to live with things the way they are.	○	○	○	○
14. I just can't be near anything that reminds me of these problems.	○	○	○	○
15. I try not to think about it, to forget all about it.	○	○	○	○
16. I really don't know what I feel.	○	○	○	○
17. I ask other people for help or ideas about how to make the problem better. Circle all you talked to :	○	○	○	○
Parent Friend Brother/Sister Teacher God None of these				
18. When I have problems with other kids, I can't stop thinking about them when I try to sleep or I have bad dreams about them.	○	○	○	○
19. I tell myself that I can get through this.	○	○	○	○
20. I let my feelings out. (remember to bubble) I do this by: (circle all you did)	○	○	○	○
Writing in a journal Drawing/Painting Complaining Being Sarcastic Listening to music Punching pillow Exercising Yelling Crying				
Other things?				

7757

How much do you do this?

When dealing with problems with other kids...

	Not at all	A Little	Some	A Lot
21. I get help from other people when I am trying to figure out how to deal with my feelings.	○	○	○	○

Circle all that you went to:

Parent Friend Brother/Sister Pet
Teacher God Stuffed Animal None of these

22. I just can't get myself to face the problem or situation.	○	○	○	○
23. I wish that someone would just come and get me out of the mess.	○	○	○	○
24. I do something to try to fix the problem or change things.	○	○	○	○

Write one thing you did:

25. Thoughts about these problems just pop into my head.	○	○	○	○
26. I feel it in my body	○	○	○	○

Circle all that happen:

My heart races My breathing speeds up
I feel hot or sweaty My muscles get tight

Good Job! You are HALF done!! Before you keep going--look back at what problems you checked on page one and other problems you wrote that you have had dealing with other kids. Remember to answer these questions thinking about those problems!

When dealing with problems with other kids...	Not at all	A Little	Some	A Lot
27. I try to stay away from people and things that make me feel upset or remind me of these problems.	○	○	○	○
28. I don't feel like myself, its like I am far away from everything.	○	○	○	○
29. I just take things as they are, I go with the flow.	○	○	○	○
30. **I think about happy things to take my mind off the problem or how I am feeling.**	○	○	○	○
31. I can't stop thinking about how I am feeling.	○	○	○	○
32. I get sympathy, understanding, or support from someone.	○	○	○	○

Who did you go to?

Parent Friend Brother/Sister
Teacher Other

33. **When problems with other kids happen, I can't always control what I do**	○	○	○	○

Circle all that happens:

I can't stop eating I can't stop talking
I can't stop crying I do dangerous things
I have to keep checking things Other

34. I tell myself things could be worse.	○	○	○	○
35. My mind goes blank, I can't think at all.	○	○	○	○
36. I tell myself it doesn't matter, that it isn't a big deal.	○	○	○	○
37. When I have problems with other kids I feel really:	○	○	○	○

Circle all that you feel

Angry Sad Scared
Worried/Anxious Guilty None of these

7757

When dealing with problems with other kids...

	Not at all	A Little	Some	A Lot
38. It's really hard for me to concentrate or pay attention.	○	○	○	○
39. I think about the things I am learning from the situation, or something good that will come out of it.	○	○	○	○
40. I can't stop thinking about what I did or said.	○	○	○	○
41. I say to myself "this isn't real"	○	○	○	○
42. I end up just lying around or sleeping a lot.	○	○	○	○
43. I keep my mind off my problems by:	○	○	○	○

Circle all that you do:

Exercising	Seeing friends	Watching TV
Playing Video games	Doing a hobby	Reading

44. I get upset by things that don't usually bother me.	○	○	○	○
45. I do something to calm myself down	○	○	○	○

Circle all that you do:

Take deep breaths	Pray	Walk
Listen to music	Take a Break	Meditate

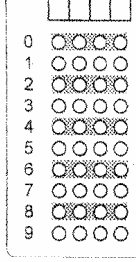
46. I just freeze, I can't do anything.	○	○	○	○
47. Sometimes I act without thinking.	○	○	○	○
48. I keep my feelings under control when I have to, then let them out when they won't make things worse.	○	○	○	○
49. I can't seem to get around to doing things I'm supposed to do.	○	○	○	○
50. I tell myself that everything will be all right.	○	○	○	○
51. I can't stop thinking about why this happened to me.	○	○	○	○
52. I think of ways to laugh about it so it won't seem so bad.	○	○	○	○
53. My thoughts start racing.	○	○	○	○
54. I imagine something really fun or exciting happening in my life.	○	○	○	○
55. I can get so upset that I can't remember what happened or what I did.	○	○	○	○
56. I try to believe it never happened.	○	○	○	○
57. Sometimes I can't control what I do or say.	○	○	○	○

Draft

RQ
Relationships Questionnaire

Julie Midthun

Subject Number



INSTRUCTIONS: Please put your subject number in the boxes above. Please answer the questions below. Please note that there are two parts to the questionnaire. Your answers to Part 1 indicate the degree to which you feel you resemble the following descriptions from **1 (not at all like me)** to **7 (very much like me).**

Part 1

1. It is easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me.
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7
2. I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7
3. I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close to me as I would like. I am uncomfortable being without close relationships, but I worry that others don't value me as much as I value them.
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7
4. I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others.
   ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7

Part 2

Please read the four paragraphs listed below. Fill in the bubble of the paragraph that best describes you now. **Please choose only one.**

○ 1 It is easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me.

○ 2 I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

○ 3 I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close to me as I would like. I am uncomfortable being without close relationships, but I worry that others don't value me as much as I value them.

○ 4 I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others.

Part 3:
Which description above bests describes how you were one year ago?

○ 1 ○ 2 ○ 3 ○ 4

Draft

RAQ

	Strongly Disagree	Disagree	Both Agree and Disagree	Agree	Strongly Agree
1. I don't object when my parent goes away for a few days.	O	O	O	O	O
2. I have a terrible fear that my relationship with my parent will end.	O	O	O	O	O
3. I have to have my parent with me when I am upset.	O	O	O	O	O
4. I'm confident that my parent will try to understand my feelings.	O	O	O	O	O
5. I turn to my parent for many things, including comfort and reassurance.	O	O	O	O	O
6. I worry that my parent will let me down.	O	O	O	O	O
7. I'm afraid that I will lose my parent's love.	O	O	O	O	O
8. I resent it when my parent spends time away from me.	O	O	O	O	O
9. I feel lost if I'm upset and my parent is not around.	O	O	O	O	O
10. I talk things over with my parent.	O	O	O	O	O
11. I'm confident that my parent will always love me.	O	O	O	O	O
12. Things have to be really bad for me to ask my parent for help.	O	O	O	O	O
13. When I'm upset, I am confidetn my parent will be there to listen to me.	O	O	O	O	O
14. I feel abandoned when my parent is away for a few days.	O	O	O	O	O
15. When I am anxious I desperately need to be close to my parent.	O	O	O	O	O

10316

Cancer Specific Questions:

Now I am going to ask you some questions about diagnosis and treatment of cancer.

1. What type of cancer were you diagnosed with?

○ Lung ○ Breast ○ Colorectal ○ Prostate ○ Pancretic ○ Skin ○ Other

2. When was your cancer diagnosed?

If you have had cancer before list the most RECENT time you were diagnosed.

Month / Year

3. What stage was your cancer at this diagnosis?

○ Stage 0 ○ Stage 1 ○ Stage 2 ○ Stage 3 ○ Stage 4 ○ I don't know

4. Have you been diagnosed with cancer before? ○ NO ○ YES

If YES: When were you diagnosed?

5. What types of treatment have you had for cancer?
Mark all that apply

○ Chemotherapy ○ Radiation Therapy ○ Surgery ○ Hormone Therapy ○ Other

6. Will you receive additional treatment for cancer?
Mark all that apply

○ Chemotherapy ○ Radiation Therapy ○ Surgery ○ Hormone Therapy ○ Other

7. What is your current status with regard to cancer?

8. How much have you told your adolescent about your cancer?

○ Nothing ○ Very little ○ Some ○ A lot ○ Everything

9. How much has your adolescent contributed to decisions made about your cancer treatment?

○ Nothing ○ Very little ○ Some ○ A lot ○ Everything

10. How serious do you think your cancer is?

○ Not serious ○ Somewhat serious ○ Rather serious ○ Very serious

11. How serious do you think your adolescent thinks your cancer is?

○ Not serious ○ Somewhat serious ○ Rather serious ○ Very serious

12. How much do you think your cancer has changed your adolescent's life?

○ No effect ○ A little ○ Somewhat ○ A great deal ○ Has changed everything

13. How much do you think your adolescent worries about your cancer?

○ Not at all ○ A little ○ Some ○ A lot ○ All the time

Parent version

12174

Cancer Specific Questions:

Now I am going to ask you some questions about diagnosis and treatment of your parent's cancer.

1. What type of cancer was your parent diagnosed with?

○ Lung ○ Breast ○ Colorectal ○ Prostate ○ Pancretic ○ Skin ○ Other

2. When was your parent's cancer diagnosed?

If they have had cancer before list the most RECENT time they were diagnosed.

☐☐ / ☐☐☐☐

Month Year

3. What stage was your parent's cancer at this diagnosis?

○ Stage 0 ○ Stage 1 ○ Stage 2 ○ Stage 3 ○ Stage 4 ○ I don't know

4. Have they been diagnosed with cancer before? ○ NO ○ YES

If YES: When were they diagnosed?

5. What types of treatment did your parent have for cancer?

Mark all that apply

○ Chemotherapy ○ Radiation Therapy ○ Surgery ○ Hormone Therapy ○ Other

6. Will they receive additional treatment for cancer?

Mark all that apply

○ Chemotherapy ○ Radiation Therapy ○ Surgery ○ Hormone Therapy ○ Other

7. How much have you been told about your parent's illness?

○ Nothing ○ Very little ○ Some ○ A lot ○ Everything

8. How realistic do you think the information you have been told is?

○ Left out a lot ○ So-So ○ Pretty realistic ○ Definately realistic

9. How much have you been included in decisions made about your parent's illness?

○ Nothing ○ Very little ○ Some ○ A lot ○ Everything

10. How serious do you think your parent thinks the illness is?

○ Not serious ○ Somewhat serious ○ Rather serious ○ Very serious

11. How serious do you think the illness is?

○ Not serious ○ Somewhat serious ○ Rather serious ○ Very serious

12. How much has your parent's illness affected your life?

○ No effect ○ A little ○ Somewhat ○ A great deal ○ Has changed everything

13. How much do you worry about your parent's illness?

○ Not at all ○ A little ○ Some ○ A lot ○ All the time

Adolescent version

☐☐☐☐

44026

Responses to Stress Questionnaire- Parent Report

A. Teenagers deal with a lot of stressful situations, especially when they have a parent with a serious illness.

1. So that we can find out how things have been going for your adolescent lately, please put a check mark by all the things on this list that you think have been a problem for him or her since you have been sick.

- O He/she has more responsibility than they used to
- O He/she doesn't know what to expect from day to day
- O He/she is scared to be away from home for very long
- O He/she feels like they have no control or say in their life
- O He/she is afraid that they or someone else close to them will get sick
- O People expect him/her to feel or act a certain way
- O Me and my spouse argue more often than we used to
- O Me and/or my spouse are at the hospital a lot
- O Money is a much bigger concern than it used to be
- O I am very sick and it is hard for my teenager to see me so sick
- O Me and my spouse are dealing with lots of problems and don't have time for him/her
- O Me and/or my spouse seems depressed
- O He/she has had to miss school and other activities
- O He/she doesn't care as much about grades
- O He/she can't see their friends as much anymore
- O He/she is concerned about how my spouse is doing
- O Our family has changed a lot
- O His/her relationships with me and/or my spouse have changed
- O He/she tries to not fight with me and/or my spouse or upset us
- O He/she can't rely on us as much anymore to help them deal with problems
- O He/she is worried about their siblings
- O He/she feels selfish because of thoughts about how cancer affects their life
- O Me and/or my spouse rely on our teenager too much

Is there anything else that you think has been a problem for your teenager since you got sick?

2. Bubble in the number below that indicates how stressful you think these problems have been for your teenager:

O Not at all O A little O Some O A lot

Parent report-Ill

63414

B. Below is a list of things that people sometimes do, think, or feel when something stressful happens. Everybody deals with problems in their own way- some people do a lot of the things on this list or have many feelings, other people just do or think a few things.

Think of the situations you checked off on the last page that have been stressful to your teenager since you became ill. For each item below, fill in the bubble that means not at all, a little, some, or a lot that shows how much you believe that your adolescent does or feels these things when confronted with problems related to your illness. For some items, you may not know for sure how your adolescent would respond but just make your best guess based on your observations of him or her. Please let us know about everything that you think your teenager does, thinks, and feels, even if you don't think it helps to make things better.

When dealing with problems that have to do with my illness, my teenager...	Not at all	A Little	Some	A Lot
1. tries not to feel anything.	○	○	○	○
2. feels sick to his/her stomach or gets headaches.	○	○	○	○
3. tries to think of different ways to change the problem or fix the situation.	○	○	○	○
4. doesn't feel anything at all, like he or she has no feelings.	○	○	○	○
5. wishs s/he was stronger, smarter, or better so things would be different.	○	○	○	○
6. keeps remembering what happened or can't stop thinking about what might happen.	○	○	○	○
7. My teenager lets someone or something know how s/he feels	○	○	○	○
8. decides that s/he is okay the way they are, even though s/he is not perfect.	○	○	○	○
9. When s/he is around other people they act like the problems never happened.	○	○	○	○
10. My teenager just has to get away, s/he can't stop him/herself.	○	○	○	○
11. My teenager deals with the problem by wishing it would just go away, that everything would work itself out.	○	○	○	○
12. S/he gets really jumpy.	○	○	○	○
13. S/he realizes that s/he just has to live with things the way they are.	○	○	○	○
14. S/he just can't be near anything that reminds him/her of my illness.	○	○	○	○
15. S/he tries not to think about it, to forget all about it.	○	○	○	○
16. S/he really doesn't know what to feel.	○	○	○	○
17. S/he asks other people for help or ideas about how to make the problem better.	○	○	○	○
18. When my teenager has problems about my illness, s/he can't stop thinking about them when s/he tries to sleep or has bad dreams about them.	○	○	○	○
19. S/he tells him/herself that s/he can get through this.	○	○	○	○
20. S/he lets their feelings out.	○	○	○	○
21. S/he gets help from other people when s/he is trying to figure out how to deal with his or her feelings.	○	○	○	○
22. My teenager just can't get him or herself to face the problem or situation.	○	○	○	○
23. S/he wishes that someone would just come and get them out of the mess.	○	○	○	○
24. S/he does something to try to fix the problem or change things.	○	○	○	○
25. Thoughts about my illness just pop into his or her head.	○	○	○	○
26. My teenager feels it in his or her body	○	○	○	○

63414

Good Job! You are HALF done!! Before you keep going--look back at what problems you checked on page one and other problems you wrote down that your adolescent is facing due to your illness. Remember to answer these questions about how your teenager deals with those types of problems!

When dealing with problems that have to do with my illness, my teenager...	Not at all	A Little	Some	A Lot
27. tries to stay away from people and things that make him or her feel upset or reminds them of my illness.	○	○	○	○
28. S/he doesn't feel like him or herself, its like s/he is far away from everything.	○	○	○	○
29. S/he just takes things as they are, they go with the flow.	○	○	○	○
30. S/he **thinks about happy things to take his or her mind off the problem or how they are feeling.**	○	○	○	○
31. S/he can't stop thinking about how s/he is feeling.	○	○	○	○
32. S/he gets sympathy, understanding, or support from someone.	○	○	○	○
33. **When problems from my illness happen, s/he can't always control what s/he does**	○	○	○	○
34. My teenager tells him or herself things could be worse.	○	○	○	○
35. His/her mind goes blank, s/he can't think at all.	○	○	○	○
36. S/he tells him or herself it doesn't matter, that it isn't a big deal.	○	○	○	○
37. When s/he has problems about my illness s/he feels really: Circle all that apply and fill in the appropriate circle:	○	○	○	○

Angry Sad Scared Worried/anxious None of these

38. It's really hard for him or her to concentrate or pay attention.	○	○	○	○
39. S/he thinks about the things s/he is learning from the situation, or something good that will come out of it.	○	○	○	○
40. S/he can't stop thinking about what s/he did or said.	○	○	○	○
41. S/he says to him or herself "this isn't real"	○	○	○	○
42. S/he ends up just lying around or sleeping a lot.	○	○	○	○
43. My teenager keeps his/her mind off the problems by: Circle all that he or she does and fill in a circle:	○	○	○	○

Exercising Seeing friends Watching TV Playing Video games Doing a hobby Reading

44. S/he gets upset by things that don't usually bother him/her.	○	○	○	○
45. My teenager does something to calm him or herself down Circle all that he or she does:	○	○	○	○

Take deep breaths Pray Walk Listen to music Take a Break Meditate

46. He or she just freezes, they can't do anything.	○	○	○	○
47. Sometimes s/he acts without thinking.	○	○	○	○
48. S/he keeps their feelings under control when they have to, then lets them out when they won't make things worse.	○	○	○	○
49. S/he can't seem to get around to doing things they are supposed to do.	○	○	○	○
50. S/he tells him or herself that everything will be all right.	○	○	○	○
51. S/he can't stop thinking about why this happened to them.	○	○	○	○
52. S/he thinks of ways to laugh about it so it won't seem so bad.	○	○	○	○
53. His or her thoughts start racing.	○	○	○	○
54. S/he imagines something really fun or exciting happening in his or her life.	○	○	○	○
55. S/he can get so upset that they can't remember what happened or what they did.	○	○	○	○
56. S/he tries to believe it never happened.	○	○	○	○
57. Sometimes s/he can't control what they do or say.	○	○	○	○

18905

Responses to Stress Questionnaire- Adolescent Report

A. Teenagers deal with a lot of stressful situations, especially when they have a parent with a serious illness.

1. So that we can find out how things have been going for you lately, please put a check mark by all the things on this list that have been a problem for you since your parent has been sick.

- ○ I have more responsibility than I used to
- ○ I don't know what to expect from day to day
- ○ I am scared to be away from home for very long
- ○ I feel like I have no control or say in my life
- ○ I am afraid I will get sick or someone else close to me will get sick
- ○ People expect me to feel or act a certain way
- ○ My parents argue more often than they used to
- ○ My parents are at the hospital a lot
- ○ Money is a much bigger concern than it used to be
- ○ My parent is very sick and it is hard to see them so sick
- ○ My parents are dealing with lots of problems and don't have time for me
- ○ One or both of my parents seems depressed
- ○ I have had to miss school and other activities
- ○ I don't care as much about grades
- ○ I can't see my friends as much anymore
- ○ I am concerned about how my well parent is doing
- ○ My family has changed a lot
- ○ My relationships with my parents have changed
- ○ I try to not fight with my parents or upset them
- ○ I can't rely on my parents as much anymore to help me deal with problems
- ○ I am worried about my brother(s) and/or sister(s)
- ○ I feel selfish because I think a lot about how my parent's illness affects my life
- ○ My parents rely on me too much

Is there anything else has been a problem for you since your parent got sick?

2. Bubble in the number that shows how stressful these are, or how much these problems have bothered you:

○ Not at all ○ A little ○ Some ○ A lot

Adolescent report-Ill

20804

B. This is a list of things that people sometimes do, think, or feel when something stressful happens. Everybody deals with problems in their own way- some people do a lot of the things on this list or have a bunch of feelings, other people just do or think a few things.

Think of the situations you just checked off. For each item below, fill in the bubble that means not at all, a little, some or a lot that shows how much you do or feel these things when you have problems related to your parent having a serious illness (like the ones you checked off). Some answers ask you to write in a short description but you also need to fill in a bubble for these questions. Please let us know about everything that you do, think, and feel, even if you don't think it helps to make things better.

When dealing with problems that have to do with my parent's illness...	Not at all	A Little	Some	A Lot
1. I try not to feel anything.	○	○	○	○
2. I feel sick to my stomach or get headaches.	○	○	○	○
3. I try to think of different ways to change the problem or fix the situation. Write one plan you thought of:	○	○	○	○
4. I don't feel anything at all, like I have no feelings.	○	○	○	○
5. I wish I were stronger, smarter, or better so things would be different.	○	○	○	○
6. I keep remembering what happened or can't stop thinking about what might happen.	○	○	○	○
7. I let someone or something know how I feel (Remember to bubble) Circle who you talked to:	○	○	○	○

Parent	Friend	Brother/Sister	Pet
Teacher	God	Stuffed Animal	None of these

8. I decide I am okay the way I am, even though I'm not perfect.	○	○	○	○
9. When I'm around other people I act like the problems never happened.	○	○	○	○
10. I just have to get away, I can't stop myself.	○	○	○	○
11. I deal with the problem by wishing it would just go away, that everything would work itself out.	○	○	○	○
12. I get really jumpy.	○	○	○	○
13. I realize that I just have to live with things the way they are.	○	○	○	○
14. I just can't be near anything that reminds me of my parent's illness.	○	○	○	○
15. I try not to think about it, to forget all about it.	○	○	○	○
16. I really don't know what I feel.	○	○	○	○
17. I ask other people for help or ideas about how to make the problem better. Circle all you talked to :	○	○	○	○

Parent	Friend	Brother/Sister
Teacher	God	None of these

18. When I have problems about my parent's illness, I can't stop thinking about them when I try to sleep or I have bad dreams about them.	○	○	○	○
19. I tell myself that I can get through this.	○	○	○	○
20. I let my feelings out. (remember to bubble) I do this by: (circle all you did)	○	○	○	○

Writing in a journal	Drawing/Painting	Complaining
Being Sarcastic	Listening to music	Punching pillow
Exercising	Yelling	Crying

Other things?

20804

How much do you do this?

When dealing with problems that have to do with my parent's illness...

	Not at all	A Little	Some	A Lot
21. I get help from other people when I am trying to figure out how to deal with my feelings.	○	○	○	○

Circle all that you went to:

Parent Friend Brother/Sister Pet
Teacher God Stuffed Animal None of these

22. I just can't get myself to face the problem or situation.	○	○	○	○
23. I wish that someone would just come and get me out of the mess.	○	○	○	○
24. I do something to try to fix the problem or change things.	○	○	○	○

Write one thing you did:

25. Thoughts about my parent's illness just pop into my head.	○	○	○	○
26. I feel it in my body	○	○	○	○

Circle all that happen:

My heart races My breathing speeds up
I feel hot or sweaty My muscles get tight

Good Job! You are HALF done!! Before you keep going--look back at what problems you checked on page one and other problems you wrote that come from having a parent who is seriously ill. Remember to answer these questions thinking about those problems!

When dealing with problems that have to do with my parent's illness...	Not at all	A Little	Some	A Lot
27. I try to stay away from people and things that make me feel upset or remind me of my parent's illness.	○	○	○	○
28. I don't feel like myself, its like I am far away from everything.	○	○	○	○
29. I just take things as they are, I go with the flow.	○	○	○	○
30. **I think about happy things to take my mind off the problem or how I am feeling.**	○	○	○	○
31. I can't stop thinking about how I am feeling.	○	○	○	○
32. I get sympathy, understanding, or support from someone.	○	○	○	○

Who did you go to?

Parent Friend Brother/Sister
Teacher Other

33. **When problems from my parent's illness happen, I can't always control what I do**	○	○	○	○

Circle all that happens:

I can't stop eating I can't stop talking
I can't stop crying I do dangerous things
I have to keep checking things Other

34. I tell myself things could be worse.	○	○	○	○
35. My mind goes blank, I can't think at all.	○	○	○	○
36. I tell myself it doesn't matter, that it isn't a big deal.	○	○	○	○
37. When I have problems about my parent's illness I feel really:	○	○	○	○

Circle all that you feel

Angry Sad Scared
Worried/Anxious Guilty None of these

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When dealing with problems that have to do with my parent's illness...

	Not at all	A Little	Some	A Lot
38. It's really hard for me to concentrate or pay attention.	○	○	○	○
39. I think about the things I am learning from the situation, or something good that will come out of it.	○	○	○	○
40. I can't stop thinking about what I did or said.	○	○	○	○
41. I say to myself "this isn't real"	○	○	○	○
42. I end up just lying around or sleeping a lot.	○	○	○	○
43. I keep my mind off my problems by: Circle all that you do:	○	○	○	○
Exercising Seeing friends Watching TV Playing Video games Doing a hobby Reading				
44. I get upset by things that don't usually bother me.	○	○	○	○
45. I do something to calm myself down Circle all that you do:	○	○	○	○
Take deep breaths Pray Walk Listen to music Take a Break Meditate				
46. I just freeze, I can't do anything.	○	○	○	○
47. Sometimes I act without thinking.	○	○	○	○
48. I keep my feelings under control when I have to, then let them out when they won't make things worse.	○	○	○	○
49. I can't seem to get around to doing things I'm supposed to do.	○	○	○	○
50. I tell myself that everything will be all right.	○	○	○	○
51. I can't stop thinking about why this happened to me.	○	○	○	○
52. I think of ways to laugh about it so it won't seem so bad.	○	○	○	○
53. My thoughts start racing.	○	○	○	○
54. I imagine something really fun or exciting happening in my life.	○	○	○	○
55. I can get so upset that I can't remember what happened or what I did.	○	○	○	○
56. I try to believe it never happened.	○	○	○	○
57. Sometimes I can't control what I do or say.	○	○	○	○

Psychosocial Adjustment to Illness Scale

SECTION I

(1) Which of the following statements best describes your usual attitude about taking care of your health?

[ ] a) I am very concerned and pay close attention to my personal health.
[ ] b) Most of the time I pay attention to my health care needs.
[ ] c) Usually, I try to take care of health matters but sometimes I just don't get around to it.
[ ] d) Health care is something that I just don't worry too much about.

(2) Your present illness probably requires some special attention and care on your part. Would you please select the statement below that best describes your reaction.

[ ] a) I do things pretty much the way I always have done them and I don't worry or take any special considerations for my illness.
[ ] b) I try to do all the things I am supposed to do to take care of myself, but lots of times I forget or I am too tired or busy.
[ ] c) I do a pretty good job taking care of my present illness.
[ ] d) I pay close attention to all the needs of my present illness and do everything I can to take care of myself.

(3) In general, how do you feel about the quality of medical care available today and the doctors who provide it?

[ ] a) Medical care has never been better, and the doctors who give it are doing an excellent job.
[ ] b) The quality of medical care available is very good, but there are some areas that could stand improvement.
[ ] c) Medical care and doctors are just not of the same quality they once were.
[ ] d) I don't have much faith in doctors and medical care today.

(4) During your present illness you have received treatment from both doctors and medical staff. How do you feel about them and the treatment you have received from them?

[ ] a) I am very unhappy with the treatment I have received and don't think the staff has done all they could have for me.
[ ] b) I have not been impressed with the treatment I have received, but I think it is probably the best they can do.
[ ] c) The treatment has been pretty good on the whole, although there have been a few problems.
[ ] d) The treatment and the treatment staff have been excellent.

(5) When they are ill, different people expect different things about their illness, and have different attitudes about being ill. Could you please check the statement below which comes closest to describing your feelings.

[ ] a) I am sure that I am going to overcome the illness and its problems quickly and get back to being my old self.
[ ] b) My illness has caused some problems for me, but I feel I will overcome them fairly soon, and get back to the way I was before.
[ ] c) My illness has really put a great strain on me, both physically and mentally, but I am trying very hard to overcome it, and feel sure that I will be back to my old self some of these days.
[ ] d) I feel worn out and very weak from my illness, and there are times when I don't know if I am really ever going to be able to overcome it.

(6) Being ill can be a confusing experience, and some patients feel that they do not receive enough information and detail from their doctors and the medical staff about their illness. Please select a statement below which best describes your feelings about this matter.

[ ] a) My doctor and the medical staff have told me very little about my illness even though I have asked more than once.
[ ] b) I do have some information about my illness but I feel I would like to know more.
[ ] c) I have a pretty fair understanding about my illness and feel that if I want to know more I can always get the information.
[ ] d) I have been given a very complete picture of my illness, and my doctor and the medical staff have given me all the details I wish to have.

(7) **In an illness such as yours, people have different ideas about their treatment and what to expect from it. Please select one of the statements below which best describes what you expect about your treatment.**

[ ] a) I believe my doctors and medical staff are quite able to direct my treatment and feel it is the best treatment I could receive.
[ ] b) I have trust in my doctor's direction of my treatment; however, sometimes I have doubts about it.
[ ] c) I don't like certain parts of my treatment which are very unpleasant, but my doctors tell me I should go through it anyway.
[ ] d) In many ways I think my treatment is worse than the illness, and I am not sure it is worth going through it.

(8) **In an illness such as yours, patients are given different amounts of information about their treatment. Please select a statement from those below which best describes information you have been given about your treatment.**

[ ] a) I have been told almost nothing about my treatment and feel left out about it.
[ ] b) I have some information about my treatment, but not as much as I would like to have.
[ ] c) My information concerning treatment is pretty complete, but there are one or two things I still want to know.
[ ] d) I feel my information concerning treatment is very complete and up-to-date.

SECTION II

(1) **Has your illness interfered with your ability to do your job (schoolwork)?**

[ ] a) No problems with my job
[ ] b) Some problems, but only minor ones
[ ] c) Some serious problems
[ ] d) Illness has totally prevented me from doing my job

(2) **How well do you physically perform your job (studies) now?**

[ ] a) Poorly
[ ] b) Not too well
[ ] c) Adequately
[ ] d) Very well

(3) **During the past 30 days, have you lost any time at work (school) due to your illness?**

[ ] a) 3 days or less
[ ] b) 1 week
[ ] c) 2 weeks
[ ] d) More than 2 weeks

(4) **Is your job (school) as important to you now as it was before your illness?**

[ ] a) Little or no importance to me now
[ ] b) A lot less important
[ ] c) Slightly less important
[ ] d) Equal or greater importance than before

(5) **Have you had to change you goals concerning your job (education) as a result of your illness?**

[ ] a) My goals are unchanged
[ ] b) There has been a slight change in my goals
[ ] c) My goals have changed quite a bit
[ ] d) I have changed my goals completely

(6) Have you noticed any increase in problems with your co-workers (students, neighbors) since your illness?

[ ] a) A great increase in problems
[ ] b) A moderate increase in problems
[ ] c) A slight increase in problems
[ ] d) None

SECTION III

(1) How would you describe your relationship with your husband or wife (partner, if not married) since your illness?

[ ] a) Good
[ ] b) Fair
[ ] c) Poor
[ ] d) Very Poor

(2) How would you describe your general relationships with the other people you live with (e.g., children, parents, aunts, etc.)?

[ ] a) Very Poor
[ ] b) Poor
[ ] c) Fair
[ ] d) Good

(3) How much has your illness interfered with your work and duties around the house?

[ ] a) Not at all
[ ] b) Slight problems, easily overcome
[ ] c) Moderate problems, not all of which can be overcome
[ ] d) Severe difficulties with household duties

(4) In those areas where your illness has caused problems with your household work, how has the family shifted duties to help you out?

[ ] a) The family has not been able to help out at all
[ ] b) The family has tried to help but many things are left undone
[ ] c) The family has done well except for a few minor things
[ ] d) No problem

(5) Has your illness resulted in a decrease in communication between you and members of your family?

[ ] a) No decrease in communication
[ ] b) A slight decrease in communication
[ ] c) Communication has decreased, and I feel somewhat withdrawn from them
[ ] d) Communication has decreased a lot, and I feel very alone

(6) Some people with an illness like yours feel they need help from other people (friends, neighbors, family, etc.) to get things done from day-to-day. Do you feel you need such help and is there anyone to provide it?

[ ] a) I really need help but seldom is anyone around to help
[ ] b) I get some help, but I can't count on it all the time
[ ] c) I don't get all the help I need all of the time, but most of the time help is there when I need it
[ ] d) I don't feel I need such help, or the help I need is available from my family or friends

(7) Have you experienced any physical disability with your illness?

[ ] a) No physical disability
[ ] b) A slight physical disability
[ ] c) A moderate physical disability
[ ] d) A severe physical disability

(8) **An illness such as yours can sometimes cause a drain on the family's finances; are you having any difficulties meeting the financial demands of your illness?**

[ ] a) Severe financial hardship
[ ] b) Moderate financial problems
[ ] c) A slight financial drain
[ ] d) No money problems

SECTION IV

(1) **Sometimes having an illness can cause problems in a relationship. Has your illness led to any problems with your husband or wife (partner, if not married)?**

[ ] a) There has been no change in our relationship
[ ] b) We are a little less close since my illness
[ ] c) We are definitely less close since my illness
[ ] d) We have had serious problems or a break in our relationship since my illness

(2) **Sometimes when people are ill they report a loss of interest in sexual activities. Have you experienced less sexual interest since your illness?**

[ ] a) Absolutely no sexual interest since illness
[ ] b) A marked loss of sexual interest
[ ] c) A slight loss of sexual interest
[ ] d) No loss of sexual interest

(3) **Illness sometimes causes a decrease in sexual activity. Have you experienced any decrease in the frequency of your sexual activities?**

[ ] a) No decrease in sexual activities
[ ] b) Slight decrease in sexual activities
[ ] c) Marked decrease in sexual activities
[ ] d) Sexual activities have stopped

(4) **Has there been any change in the pleasure or satisfaction you normally experience from sex?**

[ ] a) Sexual pleasure and satisfaction have stopped
[ ] b) A marked loss of sexual pleasure or satisfaction
[ ] c) A slight loss of sexual pleasure or satisfaction
[ ] d) No change in sexual satisfaction

(5) **Sometimes an illness will cause interference in a person's ability to perform sexual activities even though the person is still interested in sex. Has this happened to you, and if so, to what degree?**

[ ] a) No change in my ability to have sex
[ ] b) Slight problems with my sexual performance
[ ] c) Constant sexual performance problems
[ ] d) Totally unable to perform sexually

(6) **Sometimes an illness will interfere with a couple's normal sexual relationship and cause arguments or problems between them. Have you and your partner had any arguments like this, and if so, to what degree?**

[ ] a) Constant arguments
[ ] b) Frequent arguments
[ ] c) Some arguments
[ ] d) No arguments

SECTION V

(1) **Have you had as much contact as usual (either personally or by telephone) with members of your family outside your household since your illness?**

[ ] a) Contact is the same or greater since illness
[ ] b) Contact is slightly less
[ ] c) Contact is markedly less
[ ] d) No contact since illness

(2) **Have you remained as interested in getting together with these members of your family since your illness?**

[ ] a) Little or no interest in getting together with them
[ ] b) Interest is a lot less than before
[ ] c) Interest is slightly less
[ ] d) Interest is the same or greater since illness

(3) **Sometimes, when people are ill, they are forced to depend on members of the family outside their household for physical help. Do you need physical help from them, and do they supply the help you need?**

[ ] a) I need no help, or they give me all the help I need
[ ] b) Their help is enough, except for some minor things
[ ] c) They give me some help but not enough
[ ] d) They give me little or no help even though I need a great deal

(4) **Some people socialize a great deal with members of their family outside their immediate household. Do you do much socializing with these family members, and has your illness reduced such socializing?**

[ ] a) Socializing with them has been pretty much eliminated
[ ] b) Socializing with them has been reduced significantly
[ ] c) Socializing with them has been reduced somewhat
[ ] d) Socializing with them has been pretty much unaffected, or (I have never done much socializing of this kind)

(5) **In general, how have you been getting along with these members of your family recently?**

[ ] a) Good
[ ] b) Fair
[ ] c) Poor
[ ] d) Very poor

SECTION VI

(1) **Are you still as interested in your leisure-time activities and hobbies as you were prior to your illness?**

[ ] a) Same level of interest as previously
[ ] b) Slightly less interest than before
[ ] c) Significantly less interest than before
[ ] d) Little or no interest remaining

(2) **How about actual participation? Are you still actively involved in doing those activities?**

[ ] a) Little or no participation at present
[ ] b) Participation reduced significantly
[ ] c) Participation reduced slightly
[ ] d) Participation remains unchanged

Please continue on the following page ▶

(3) **Are you as interested in leisure time activities with your family (i.e., playing cards & games, taking trips, going swimming, etc.) as you were prior to your illness?**

[ ] a) Same level of interest as previously
[ ] b) Slightly less interest than before
[ ] c) Significantly less interest than before
[ ] d) Little or no interest remaining

(4) **Do you still participate in those activities to the same degree you once did?**

[ ] a) Little or no participation at present
[ ] b) Participation reduced significantly
[ ] c) Participation reduced slightly
[ ] d) Participation remains unchanged

(5) **Have you maintained your interest in social activities since your illness (e.g., social clubs, church groups, going to the movies, etc.)?**

[ ] a) Same level of interest as previously
[ ] b) Slightly less interest than before
[ ] c) Significantly less interest than before
[ ] d) Little or no interest remaining

(6) **How about participation? Do you still go out with your friends and do those things?**

[ ] a) Little or no participation at present
[ ] b) Participation reduced significantly
[ ] c) Participation reduced slightly
[ ] d) Participation remains unchanged

SECTION VII

(1) **Recently, have you felt afraid, tense, nervous, or anxious?**

[ ] a) Not at all [ ] b) A little bit [ ] c) Quite a bit [ ] d) Extremely

(2) **Recently, have you felt sad, depressed, lost interest in things, or felt hopeless?**

[ ] a) Extremely [ ] b) Quite a bit [ ] c) A little bit [ ] d) Not at all

(3) **Recently, have you felt angry, irritable, or had difficulty controlling your temper?**

[ ] a) Not at all [ ] b) A little bit [ ] c) Quite a bit [ ] d) Extremely

(4) **Recently, have you blamed yourself for things, felt guilty, or felt like you have let people down?**

[ ] a) Extremely [ ] b) Quite a bit [ ] c) A little bit [ ] d) Not at all

(5) **Recently, have you worried much about your illness or other matters?**

[ ] a) Not at all [ ] b) A little bit [ ] c) Quite a bit [ ] d) Extremely

(6) **Recently, have you been feeling down on yourself or less valuable as a person?**

[ ] a) Extremely [ ] b) Quite a bit [ ] c) A little bit [ ] d) Not at all

(7) **Recently, have you been concerned that your illness has caused changes in the way you look that make you less attractive?**

[ ] a) Not at all [ ] b) A little bit [ ] c) Quite a bit [ ] d) Extremely